The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXV, No. 2 CHICAGO, ILLINOIS JULY 10, 1915

THE USE OF WORDS *

THOMAS McCRAE, M.D., F.R.C.P. (LONDON)
Professor of Medicine, Jefferson Medical College
PHILADELPHIA

It may be thought that this subject is too simple to deserve attention and that the use of words comes naturally to us all. So it does, but the manner in which we use them shows much variation and it is both with the use and abuse of words that this address deals. To point out the importance of the proper use of words may clear the ground. They are, in the spoken or written form, our principal means of communication with each other and with the outside world. Some persons can convey much by gestures and pantomime, but these count for little in the ordinary mode of expression. Each of us lives in his own circle giving ideas to others or receiving them from others by the medium of words. The point that if one is to give or receive clear ideas the medium of exchange should have a definite value does not need emphasis. There must always be some difficulty in regard to this for we grow up having special associations with particular words, sometimes conscious, sometimes unconscious, yet we should make a continual effort to realize the general sense in which the word is used. Take the word "hospital" as an illustration. This may call up different associations in the mind of a trustee, a physician, and a patient who has happy or unhappy recollection of a sojourn there, but the general meaning attached to the word "hospital" is well understood.

Words are our coins of mental exchange and as in money transactions we demand a rigid standard so should we in the use of words. Financially we would be in confusion if a five dollar bill was regarded by one man as ten dollars and by another as one dollar; we could never do business properly. Yet in the sphere of ideas we are content to do this and exchange terms which may have a very different value for each person concerned. This discrepancy may be known and allowed for, but too often it is not and one person conveys an idea to another using a word in one sense which is received by the other person with a very different significance. This must always be the case to some extent, but in medicine it seems important for us to try to make the use of words as uniform as possible. This applies particularly to the teaching of students and the information of the public. We know how many controversies have raged over questions in which the participants were really not discussing the same subject at all. Each had quite a different idea as to what was under discussion because, while they used the same words, these stood for different concepts.

For many, indeed, words stand for their own particular ideas and conceptions. Words are given attributes which they do not possess, as for instance the word "pneumonia." Some men magnify the word and when they use it the whole train of thought called up is some mental creation of their own and not of the usual disease picture. Among these persons are those who cannot consider the possibility that the disease may be present without certain definite physical signs. For them pneumonia must always be accompanied by crepitant râles; in their absence the disease cannot be pneumonia. Others cannot consider that a patient may have typhoid fever unless rose spots and diarrhea are present.

Some years ago a clinical club composed of teachers of medicine in several eastern cities took up the subject of the terminology of the diseases of the chest. The varied meanings attached to the same term which were brought out by the discussion surprised every one. For example, what meaning does one attach to the terms "pectoriloquy" and "bronchophony"? It may be supposed that there is only one meaning for each, but some inquiry will show the error of such an opinion. How are the terms "bronchial" and "tubular" used in their application to breath sounds? Much difference of opinion will be found in regard to this. One point which demonstrated how an error may be perpetuated was the meaning attached to the word "rhonchus." In one city this word had been given an incorrect meaning and this had been so perpetuated by successive teachers that many students graduated with an erroneous idea. One can readily illustrate the point if he will occasionally have curiosity enough to look up a word the meaning of which he thinks he knows correctly. For instance what is the meaning of the word "bruit"? Many have mysterious ideas as to its significance. Good schoolmasters have the idea, with which many of their pupils do not agree, that one does not know a thing which he cannot explain. Many schoolboys when cornered have a habit of saying they know a thing but cannot explain it. Nor does the habit disappear with boyhood by any means. It is not so uncommon to wake up suddenly to the fact that we have an erroneous idea as to the meaning of a word. Many words are learned before their meaning is understood and many words continue to be used while representing confused and uncertain ideas. Some departments of medicine are continually coining new words and we have to be alert to learn the meaning as well as the sound of these terms.

* Chairman's address, read before the Section on Practice of Medicine at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

Medical education has suffered much from teaching being too much confined to words and not given by means of observations. It has been said that the most besetting sin of a young teacher of medicine is the desire to talk to his students when he should have them making observations or thinking. Some of us may have to plead guilty to this even when no longer young. It is very easy to talk, but when we are using words we may employ them with one meaning while the student receives them with another. An illustration came up recently in connection with Litten's sign (the diaphragm phenomenon) in a discussion as to the diagnosis of a lesion which involved the diaphragm. The point at issue was whether the lesion was above or below the diaphragm. Part of the class thought that Litten's sign was the *presence* of the diaphragm phenomenon, the others thought that it meant its *absence*. Here were two exactly opposite ideas obtained from the same words. Teachers are too inclined to take for granted that their words are understood by the listeners in the same sense as the one in which they are given. Sometimes the teacher might as well be using a foreign language though in that case the listener would know that he did not understand. Too often teacher and pupil think they are using the same language when they are not.

It is tempting to discuss the use of proper names in connection with signs and diseases, but that is another story. We should endeavor to limit that use as much as possible and discourage any additions to the list of eponymous designations. Some have the sanction of age and one hesitates to demolish what is venerable with time; but certainly upstart moderns should not be received readily. If any one is in doubt regarding this let him take his medical dictionary and look at the headings under "sign" or "disease." It is good mental exercise to see how many he knows. When we find four distinct signs under the name of one man we have a right to protest. How can we know which of the four is intended when we read of A's sign? This also tends to the careless use of terms as, for example, when we read that "There was no von Graefe."

There is a steady effort to make our diagnoses as exact as possible. Does it not seem rather absurd to bend every effort to this end and then use words which have no precise meaning whatever to represent that exact diagnosis? For illustration certain examples may be discussed. There are some words which are misleading and cause much confusion because they have no definite meaning; they prevent clear thinking and lead to many errors. There are others which have varied meanings and are used to designate both a disease and a symptom. Some of the more marked instances are worthy of discussion in some detail.

The terms "rheumatism" and "chronic rheumatism" are perhaps the most notable examples of the confusion caused by the careless use of words. To my mind they are responsible to a large extent for much of the confusion which surrounds the subject of arthritis. The word rheumatism is used with no set meaning and when one hears it or comes across it in reading it may be quite impossible to know what is intended. For example, I read this statement recently: "Acute neuritis is frequent with rheumatism." What is meant by this? If the reference is to rheumatic fever it does not seem reasonable, as neuritis is extremely rare in this disease. If the reference is to some other form of arthritis, such as arthritis deformans, it is quite intelligible. But the statement is of no value as quoted and might be understood very differently by various men. An article headed "Scarlatinal Rheumatism" is a case in point. From its reading no clue could be obtained as to whether the article discussed the occurrence of arthritis in scarlet fever, a combination of scarlet fever and rheumatic fever, or a hybrid disease. A little care in the use of words would have made the matter clear. As the title stood, the article served only to "darken counsel." If one wishes to find confusion worse confounded let him read an article in French or German dealing with arthritis. What the term rheumatism means in many of these no one but the author can tell.

The use of the words as a designation for any pain, which may or may not be associated with some joint change, has no justification. To give a disorder the designation of rheumatism is too often a means of avoiding a definite diagnosis. Give a thing a name and you have the comforting feeling of having settled it and this checks further inquiry. Another point in this connection is that we are too apt to take such a diagnosis from a patient who comes stating that he has "rheumatism," and accept it. I have quoted elsewhere the example of a man who volunteered the diagnosis of rheumatism, which he said had been made by a number of physicians. (I suspect that he supplied it and they accepted it.) He objected strenuously to taking off his clothes—no other doctor had wanted that—but a glance gave the diagnosis, and it was not rheumatism—he had a popliteal aneurysm. Any man who examined him could make the diagnosis, but it had been easy to accept his opinion and be content with that. Now if a physician would not be willing to rest content with such a diagnosis, this sort of pitfall could be avoided. The use of this word leads to careless diagnosis and loose habits of thinking, which might have stronger adjectives to describe them properly. The list of diseases and conditions which have been included under the term rheumatism is a long one. For example, probably each of us knows of at least one case of tabes dorsalis so termed for a long period. What percentage of cases of acute osteomyelitis are called rheumatism for some days? No comment is needed to emphasize the serious consequences of this error.

We cannot use the word rheumatism as synonymous with arthritis generally and also to designate one special form of arthritis, rheumatic fever, and keep any clearness of thought. It would be difficult to settle which meaning should prevail and so the best plan is to give up the use of the word entirely. This may sound radical, but anyone who makes the attempt honestly can prove the advantage of it. Nothing will be lost and much will be gained. It may be difficult for a time to say gonorrheal arthritis instead of gonorrheal rheumatism but it will help in clear thinking and give a more accurate idea of the condition. Certainly for anyone who desires to have proper ideas about arthritis it is essential. The term rheumatic fever has no ambiguity; arthritis is equally definite. Another point is the mental association which is so common between the words rheumatism and salicylate. The one as a diagnosis brings up the other as a therapeutic measure. This may explain the frequency with which salicylates are given to patients with

"gonorrheal rheumatism." If the designation gonorrheal arthritis was more generally used there would probably be a saving of much good salicylate.

While on this subject the designation "acute articular rheumatism" is worth some consideration. It is an unfortunate term for it emphasizes the "articular" features of the disease. With attacks of rheumatic fever in childhood there may be no arthritis or it may be so slight that it readily escapes notice. Yet this term has fixed in our minds the articular idea as a necessary part of rheumatic fever to the great disadvantage of many patients, especially children. "Acute myocardial rheumatism" would be a much more fitting designation if it is desired to mention a part which is specially involved.

The word "phthisis" has fully as many meanings as it has pronunciations and what does a medical man understand when another speaks of phthisis? One man applies it to any form of pulmonary tuberculosis, another to an advanced stage only, another when there is a cavity present and so on. Some would emphasize the derivation of the word and use it only when marked emaciation occurs. How much better to use definite terms! A report of a Roentgen-ray examination recently came with the statement that the plate showed "fibroid phthisis." What meaning should we take from such a statement? My feeling was that the roentgenologist merely meant fibrosis, but inquiry proved the contrary. He considered that from the plate he could make a diagnosis of fibroid tuberculosis. As all other methods of investigation suggested that the patient did not have tuberculosis, I might be forgiven some doubts as to the correctness of such a conclusion from the study of the plate alone. Somewhat the same may be said about the word "consumption," but perhaps the difficulty in regard to the meaning of this is more with the public. If a patient asks you if he has consumption and you answer yes, what meaning may be taken? You have to question him to find out. One man takes it as meaning any form of tuberculous lung involvement, however slight, another as meaning cavity formation, and another as meaning an advanced condition close to death.

I hesitate to suggest anything which might diminish the use of the name of the celebrated Guy's hospital physician, but the term "Bright's disease" is not a satisfactory one. Among the profession it has no set meaning and it has still less in the minds of the public. It is not proper to tell a patient that he has Bright's disease without ascertaining what he understands by that statement or explaining what you mean by it. To many the term gives the idea of a hopeless malady with only a short duration of life. The physician and the patient may have widely different views of its meaning, especially if the former uses it for any form of nephritis, or even for the occurrence of albuminuria.

Another term which is used with various meanings is "asthma." It is employed to designate a disease, bronchial asthma, and also to designate a symptom, dyspnea, as seen in the phrase cardiac asthma. Some of you may remember that following a paper by G. A. Gibson[1] there was rather a heated discussion in the correspondence pages of the *British Medical Journal* for many weeks on this very point. The confusion connected with this term leads to unfortunate mistakes, for some men get the idea that cardiac asthma, so called, is connected with bronchial asthma and is not a serious condition. This may be responsible for the complete overlooking of myocardial disease for a considerable time with serious results to the patient. The term "asthma" should be employed to designate what is often called bronchial asthma and "dyspnea" should be called dyspnea and not asthma. The use of the same term to designate a disease and also a symptom is unfortunate.

There may be a definite condition to which the words "bilious" and "biliousness" are properly applied, but I fancy that the majority would have some difficulty in giving an exact description of it. However that may be I do not believe that anyone who strives to be definite in his ideas can have any pride in using the term. A careful search will usually show some more definite condition. Whether this be the case or not, it is to another result that attention is directed. A patient comes and states that he is "bilious." How many of us will accept this as a diagnosis and be content with it? I hope not many, but it is a temptation to do so; it is the path of least resistance. If you question the patients who volunteer such a statement it will be a surprise to find how little idea they have of what the term means and what a motley assemblage of disorders is included. In the last few months among patients who gave the information that they were "bilious" the following conditions were found. One patient, who volunteered a history of biliousness for years, was found to have ophthalmic migraine, the cause of the attacks. Another had gallstones and a third had a duodenal ulcer. A fourth had recurring attacks of vomiting and disturbance called biliousness and treated with the invariable calomel, which were found to be due to eye strain. The list might be greatly prolonged. The use of such terms as "bilious typhoid," "bilious pneumonia," etc., is difficult to justify. The expression "bilious fever" would be better forgotten.

This is not meant to suggest that there is not a condition characterized as malaise, gastric disturbance and constipation, which is helped by free purgation; but it is doubtful if the bile is often concerned. Overeating and deficient elimination seem to play the principal etiologic parts. But it is easy to put all sorts of such disturbances under the designation "biliousness," which really means nothing. Why not drop the term entirely?

There are some terms to which there are not the same objections as to those quoted but which encourage hazy conceptions. One is the word "typhoid," which is employed quite apart from the disease typhoid fever, as in the designation "typhoid pneumonia." This may mean a combination of typhoid fever and pneumonia but it is often applied to instances of pneumonia in which there are severe toxic symptoms. We have the same in the designations "typhoid malaria" and "malaria typhoid," which are happily rapidly passing out of use. A new term has recently come into usage, namely, "typhoid pellagra," to which there are the same objections. It seems a pity that we cannot get away from the tendency to employ the word "typhoid" in this way, as such constructions are confusing to students and practitioners.

I had a lesson recently from a neurologic colleague on the careless use of the word "mania." He pointed

1. Gibson, G. A.: The Varieties and Treatment of Asthma, Brit. Med. Jour., 1911, ii, 791.

out very properly that I had used it to describe a condition of very severe delirium which had maniacal characters but that such usage was confusing and did not represent the proper meaning of the word. He was perfectly right and on reflection it was quite evident that a more careful use of the word tended to clearer ideas in my own mind. There are many examples from neurology which might be given. Take the word "hysteria." Of the many times that word is used today how many times is it justified? I leave the answer to my neurologic friends. If we are sorting and classifying papers so that we can find them again without difficulty we require very definite labels on each receptacle. If there are many miscellaneous ones jumbled together we are going to have difficulty in finding a special one some time afterward. We cannot classify everything exactly or always give definite names but if we know this and keep the realization of it before us, at any rate we know our ignorance. If we give a name to such things it is easy to be satisfied with this. The men who agreed that the patient with popliteal aneurysm had "rheumatism" perhaps were satisfied but it did not help the patient.

The use of the word "temperature" when fever is meant is too common. Thus we often hear it said, "The patient has no temperature," which suggests that his temperature is zero, when the meaning is that he has no fever. If the temperature is normal, why not say so? Of another expression, "running a temperature," it would be interesting to know the origin. It suggests rather a careless use of words.

The misuse of the terms "patient" and "case" is by no means rare. I quote some examples noted recently at medical meetings which serve to bring out the incorrectness and frequent absurdity of this confusion — "A case who got," "The case was one of chronic nephritis; it died in coma," and "This case was a young man which was seen three months ago." Now it may be said that such errors make no essential difference, that everyone understands the meaning desired to be conveyed. Doubtless this is true, but the same might be said of the most ungrammatical sentences or of wrongly spelled words. Most of us would prefer to be correct. Anyone who has to read articles intended for publication knows how often this loose use of the words "patient" and "case" disfigures what may be otherwise good material. Dr. R. C. Cabot is rather pessimistic as to the number of men who seriously try to write good English. In a memoir of the late James G. Mumford he refers to him as "one of the three or four American medical writers who seriously tried to write good English." Dr. Cabot may be right in regard to the number who succeed, but I cannot agree with him as to the number who try. My purpose, however, is not so much with the writing of good English as with the value of using words as accurately as possible in our daily work. Naturally the man who uses words carelessly in his speech is not likely to do differently when he substitutes the written for the spoken word. For both speaking and writing a careful study once or twice a year of the excellent hints by Sir Clifford Allbutt[2] is advisable.

There are other choices in words which tend to clearness. Take the words "tubercular" and "tuberculous," which are often employed as synonymous. As Sir Donald Macalister well suggested it would be an advantage to use the adjective "tubercular" for morphologic conditions characterized by tubercles and "tuberculous" as the adjective corresponding to the noun tuberculosis. Thus leprosy is a tubercular disease. Lesions due to the tubercle bacillus would be termed "tuberculous pleurisy," "peritonitis," "adenitis," etc.

It may be thought that these remarks are unnecessary and perhaps savor of pedantry. To those who feel this objection, I would suggest a trial of the matter. Watch your speech for a time and when some of the words which are discussed come to your lips inquire in what significance you are using them. If you have used the word "rheumatism" decide what you mean by the term. What disease is described when an advertisement states that so many cases of "rheumatism" were aided by a particular remedy? If the term is used for one disease condition today and another tomorrow, it is like changing the labels on the bottles in a pharmacy or chemical laboratory. The label must correspond to the contents of the bottle or there will be error. Why not strive for equal accuracy in the mental labels?

Another objection may come from the difficulty of knowing what word to use in place of the discarded terms. "What am I to call these conditions if I do not use the word rheumatism?" was one comment. Surely if one is using a word to cover ignorance it is well to discard it. Try to find out what the condition really is, arthritis, fibrositis, bursitis, flatfoot, neuritis, etc. Otherwise we are not likely to help our patients or our own education. If we are not content to give meaningless names to obscure conditions, there is some chance that we may endeavor to clear up the situation.

The patient with subdeltoid bursitis is not likely to be helped by a physician who makes the diagnosis of rheumatism and rests content with that. On the contrary, in the hands of a man who refuses to be content with this term there is decidedly more chance of a thorough investigation and correct diagnosis. An interesting sidelight on this is given if one investigates concerning the number of physicians consulted by patients with so-called "chronic rheumatism." One is rarely the first. This is due largely to this very point of careless diagnosis. The referred pains of an arthritis of the spine or chronic prostatitis are not likely to be helped if they are called rheumatism.

For those of us who are teachers the duty of accuracy in the use of words is important. We desire to cultivate habits of clear thinking in our students. Is it not a handicap if we use words carelessly, with no fixed meaning? We try to give students definite ideas as to diagnosis. How can definite ideas be conveyed by indefinite words? For proper therapy it is equally important to have clear ideas. Treatment directed to a name is not likely to help the patient. To term a diseased condition cardiac asthma, when myocardial insufficiency is the cause of the symptoms, and then give remedies suited for bronchial asthma is neither good diagnosis nor good therapy. Yet the association connected with words may be responsible for this. Therefore, when so much depends on the choice of terms is it not worth while to choose them with care and use them with precision?

2. Allbutt, T. Clifford: Notes on the Composition of Scientific Papers, New York, Macmillan & Co., 1904.

SYPHILIS OF THE BRAIN

ITS OCCURRENCE, SYMPTOMS AND PREVENTION *

JOSEPH COLLINS, M.D.
Physician to the Neurological Institute
NEW YORK

The *Spirochaeta pallida*, the specific organism of syphilis, attacks all the intracranial constituents of the nervous system — the meninges, the substance of the brain (that is the cells and the supporting framework) and the blood vessels. Syphilis of the brain, therefore, may display itself in the guise of any disease of the brain, its coverings or its constituents. Fortunately, we are able by examination of the blood serum and of the cerebrospinal fluid to determine whether or not such disease is due to syphilis. In many instances, we can make the diagnosis with much certainty from a consideration of the symptoms and the way in which they develop and group themselves. But in a very considerable percentage of all the cases of brain syphilis, we can only conjecture the nature of the disease, and we must rely on the laboratory for corroboration. This is particularly true of those which do not have so-called "pathognomonic" signs — alteration of the tendon jerks, irregular outline of the pupils and loss of the light response, transient ocular palsies, etc., and more especially of a class of cases, much larger than is suspected, that are diagnosticated headache, neurasthenia, epilepsy, allied to manic depressive insanity, hysteria and other psychoses.

There are two things that have stood in the way of advancing our knowledge of syphilis of the nervous system. The first is that every writer on the subject has insisted that syphilis affecting the nervous system causes well-defined diseases, each of which has been given a separate consideration as a clinical entity.

The second great stumbling block in the way of a comprehensive knowledge of the condition has been the separation of the diseases of the nervous system, caused by the syphilitic organism, into syphilitic and parasyphilitic. Three years ago[1] I took occasion to say that diseases caused by the syphilitic organism are *syphilitic diseases*—and *always* syphilitic diseases, and to discuss the subject at some length. Recently Head and Fearnsides and McIntosh and Fildes have taken up the subject, and the latter particularly have set forth a theory to explain the diseases formerly designated parasyphilitic which is plausible, though not yet susceptible to proof.

When Noguchi and Moore[2] demonstrated the existence of the spirochetes in the brains of twelve patients out of seventy who had died of general paresis (an observation which has since been abundantly substantiated[3]), and especially when the spirochetes were found in these cases, not only in the parenchyma of the brain, but within the lumen of the vessels, the vessel walls, and the surrounding tissues, all doubt that paresis is caused by the spirochete vanished, particularly as it had been conclusively shown by the Wassermann test of the blood and cerebrospinal fluid that paresis was a syphilitic disease. Noguchi swept away the mysterious substance which the organism was supposed to manufacture, and which was the specific morbific agency causing the parasyphilitic disease.

What is here said of general paresis is unquestionably equally true for tabes.

The most important step for us to take, in our pursuit of the pathogenesis of the diseases which we know have their origin immediately or remotely in syphilis, is to recognize that all of them are due to the same organism, the difference of lesion or effect being the result: (1) of the time that has elapsed between the introduction of the organism into the tissue and the occurrence of morbid changes; in other words, the time of combat; (2) the number of organisms present and, possibly, also the variety or strain, and (3) the vital resistance, the individual himself.

There can be no doubt whatsoever that the sensitization of the tissues which takes place in the so-called "parasyphilitic" diseases occurs soon after the invasion of the body by the syphilitic organisms, that is, in the majority of instances, soon after infection. This sensitization predisposes these tissues to disease. The disease itself is caused by the further action of the organism in the body. This matter has recently been set forth very clearly by McIntosh and Fildes.[4] They show conclusively that relatively little cell reaction is produced by a large number of spirochetes in acute syphilis, while an extensive reaction is caused by a small quantity of virus in chronic syphilis. This is due to an alteration in the susceptibility of the tissues to the virus. This alteration corresponds to that described by von Pirquet as *Allergie*. This word was originally used to denote the alteration in the reactions produced by *second injections* of certain viruses. The original state studied was the "serum disease" produced in man by injections of horse serum and jennerian vaccination and revaccination.

The type of "allergie" — hypersusceptibility — present in tertiary syphilis is developed as an immunity response of an intoxication of the tissues occurring in the acute state of syphilis. The actual occurrence of the lesion is due to an exacerbation of activity of spirochetes which have been dormant. The state of hypersusceptibility (an immunity response) leaves the tissues abnormally susceptible to the toxic action of the virus. When the interstitial tissue of the central nervous system is the sensitized part exposed to the delayed or persistent action of the spirochetes, the result is a gumma. When the parenchyma is the tissue affected, the disease that results is paresis or tabes or both.

One of the most striking characteristics of the parasyphilitic diseases has been that they, unlike the so-called "frank" syphilitic diseases, were not susceptible to cure. So-called syphilitic diseases yielded to mercury when properly given, in the majority of instances; parasyphilitic diseases *never* yielded. No matter how vigorous or drastic the antisyphilitic treatment, no one has ever been able to say that a case of tabes or general paresis has been cured by it; but, in making this "susceptibility to therapy" a distinguishing feature between the two classes of diseases (the syphilitic and so-called "parasyphilitic"), we have often lost sight of the fact that the former is a disease of the supporting or interstitial tissue and the latter of the parenchyma, that is, of the nerve elements of the central nervous system. The parenchymatous cells have no more, and indeed no less, capacity of

* Owing to lack of space, this article is abbreviated in THE JOURNAL by omission of case reports and other matter. It will appear in full in the author's reprints, a copy of which will be sent by him on request.

1. Collins, Joseph: Address before the Illinois State Medical Society.
2. Noguchi and Moore: Jour. Exper. Med., 1913, xvii, 232.
3. Marie, Levaditi and Bankowski: Comptr. rend. Soc. de biol., 1913, lxxiv, 794.
4. McIntosh and Fildes: Brain, xxxvii, 141, 191.

regeneration than the parenchymatous cells of any other organ of the body. Then, so far as we know, there is no substitution of function by the cells of the central nervous system. We are not in a position to say that if one cell in the central nervous system be destroyed, its function can be taken up by an adjacent cell.

Since the introduction of salvarsan, and its utilization in the treatment of syphilis, there has been a great amount of reliable evidence — some of which I have furnished — tending to show that the parasyphilitic diseases can at least be brought to a cessation of activity by the appropriate use of this agency. It can no longer, therefore, be maintained that the so-called parasyphilitic diseases progress despite every treatment.

We are not concerned here with the subject of "why" treatment is ineffective in the diseases heretofore called parasyphilitic. We are concerned only to show that the sooner all such nomenclature is dispensed with, the more readily will the pathologic processes in the nervous system caused by the action of the spirochetes be recognized, and seen in their proper perspective.

Proceeding on the assumption that these statements are admitted to be facts, I shall discuss the subject of "brain syphilis" under four heads—

1. Its time of occurrence in relation to the time of infection.
2. Its clinical manifestations.
3. Its relative frequency, compared with all other forms of organic intracranial nervous diseases.
4. Its prevention and early treatment.

THE TIME OF OCCURRENCE OF BRAIN SYPHILIS

Nothing has hindered the recognition and successful treatment of brain syphilis so materially as the teaching that it is a late manifestation of infection. Incapacitating symptoms, indicative of destructive lesion of the nervous system, may first be recognized and interpreted long after the time of infection, but it does not follow that the time when such symptoms are recognized is the time when the nervous system is first affected. Not until physicians who treat patients with syphilis soon after infection, in hospitals and elsewhere, with facilities for study of the cerebrospinal fluid, publish the result of routine examination of that important secretion, shall we be in a position to say how often the "nervous system" is involved in early syphilis. Fortunately we are now beginning to get such reports.

Leopold of Breslau has recently published[5] a report of sixty-seven cases of so-called "primary syphilis," in 20 per cent. of which laboratory and clinical evidences showed that the central nervous system was affected even in this early stage.

Recently Wile and Stokes[6] of Ann Arbor have reported six cases of early syphilis, in four of which there were indications of serious disorder of the nervous system. In eight cases investigated by Altman and Dreyfus,[7] two had alteration of the cerebrospinal fluid that predicated affection of the central nervous system. Fahr[8] has recorded a case of syphilitic meningitis terminating fatally nine weeks after the primary lesion.

5. Leopold: Arch. f. Dermat. u. Syph., 1914, cxx, 101.
6. Wile, Udo J., and Stokes, John Hinchman: Involvement of the Nervous System During the Primary Stage of Syphilis, The Journal A. M. A., March 20, 1915, p. 979.
7. Altman and Dreyfus: München. med. Wchnschr., 1913, pp. 464, 530.
8. Fahr: Dermat. Wchnschr., 1914, lix, 1103.

It is not only recently that such reports have been published. As far back as 1880, Lang[9] pointed out very emphatically that the headache, lassitude, lethargy and other symptoms of so-called secondary syphilis were, in reality, due to disease of the meninges, and even the components of the nervous system. Ravaut[10] showed from examination of the cerebrospinal fluid taken from patients suffering from acute syphilis that there were evidences of meningeal irritation in seventy-one out of 118 specimens examined.

It is, however, in cases reported by neurologists that the most striking evidence is presented that the central nervous system is involved early in the career of the *Spirocheta pallida*. Of such cases it would be difficult to find more convincing ones than those reported from my clinic by Dr. C. B. Craig.

The neurologist is not in a position to state from his experience the percentage of cases of syphilis in which symptoms of *involvement* of the nervous system appear. There can be no doubt that many of the symptoms of early syphilis—particularly headache, lassitude, insomnia—are caused by invasion by the spirochetes of the large lymph spaces of the central nervous system, particularly those connected with the ventricles of the brain; which invasion, in many instances, is followed by ejection or destruction, and subsequent tissue reparation, by the *vis medicatrix Naturae*, or by the administration of mercury and salvarsan. There are other cases in which the invasion occurs, often violently, and then there is a long period of inconspicuous occupation while the tenure of the tissues by the spirochetes is being made secure, to be followed — often after many years — by arrogant manifestations of possession and determination to destroy.

ONE HUNDRED CONSECUTIVE CASES OF BRAIN "SYPHILIS"

Symptoms indicated that the predominant lesion was:			
Of the meninges	58		
Basilar	26		
Convexities	9		
Cerebrospinal	14		
Basal and convexities	9		
Of the blood vessels	36		
Of the brain substance	5		
Unclassified	1		
		42	
			100 Cases
History of Infection:			
Frankly admitted	58		
Inferred	10		
Denied	32		
			100 Cases
Time of Occurrence of Symptoms:			
Shortest period: 1 month (3 within 6 months, 6 within a year).			
Longest period: 30 years.			
Average interval between infection and onset of brain syphilis: 11 years.			
Preponderant average: 3 to 7 years.			
Strain of Organism:			
History of secondaries	29		
Absent (including 32 cases denied)	51		
No knowledge	13		
Sterility, repeated miscarriages	7		
			100 Cases
Number of cases that received orthodox treatment at time of infection	37		
Treatment not continued beyond few weeks	15		
Treatment during local lesion	6		
Antisyphilitic treatment later	11		
No antisyphilitic treatment	31		
			100 Cases

For the basis of this contribution, I have taken one hundred cases, seen consecutively at the Neurological Institute, of New York, in which the diagnosis of brain syphilis or cerebrospinal syphilis was made. Many of them were under my observation for from two to five years, and subjected to careful study and protracted treatment.

9. Lang: Wien. med. Wchnschr., 1880, p. 1305.
10. Ravaut: Bull. et mém. Soc. méd. de hôp. de Paris, 1913, xx, 1136.

THE CLINICAL MANIFESTATIONS OF BRAIN SYPHILIS

To state within a brief space the clinical manifestations of cerebrospinal syphilis is to delineate in miniature all the diseases of the brain and its coverings. This is manifestly impossible. I shall content myself with enumeration and brief discussion of the symptoms which are commonest in brain syphilis, and in cerebrospinal syphilis (for it cannot be said too often that these conditions are often indistinguishable), and I shall endeavor to state the specificity of such symptoms, that is, what there is about them which should suggest to the physician that they are the symptoms of syphilis.

The symptoms of brain syphilis taken individually have nothing specific or pathognomonic about them. The headache of syphilitic meningitis is not to be distinguished from the headache of other varieties of meningitis. Undue valuation has been given to the alleged nocturnal exacerbation of headache due to syphilis. The optic neuritis which is an expression of meningovascular syphilis cannot be told with the ophthalmoscope alone from the optic neuritis due to brain tumor. The hemiplegia of luetic endarteritis has often been described as different from hemiplegia depending on other forms of endarteritis, but in reality it is not. On the other hand, the grouping of the symptoms, their mode of onset and development and their conduct is most suggestive. The variability in intensity and the multiplicity of symptoms is quite characteristic. At one time they may be predominantly meningeal, a short time later cerebral or vascular or both. The meningeal symptoms may persist or recede as the latter develop. This variability of symptoms coincides without doubt with the invasion, disorder and destruction of different tissues. As a rule we can diagnosticate the chief site of the lesion from consideration of the way in which the symptoms develop and how they are grouped. For instance, cranial nerve symptoms are conspicuous early when the meninges at the base of the brain are the seat of the lesion; on the other hand, motor irritation phenomena point to implication of the convexities.

The symptoms in a general way are the same whether the lesion be of the covering, the supporting tissues or of the blood vessels. This seems paradoxical until we realize that syphilis invading the nervous system rarely confines itself to one area. We are in position to differentiate the acute and chronic forms of syphilis of the brain; to distinguish syphilis of the meninges and blood vessels from parenchymatous syphilis, that is from general paresis, in the majority of instances. That we cannot do this in all cases every one must admit.

I shall limit my discussion to syphilitic meningovascular disease, using that term synonymously for syphilis of the brain, with the full understanding, however, that parenchymatous brain syphilis, general paresis and gumma are also syphilis of the brain.

The symptoms of brain syphilis enumerated in the order of their frequency and diagnostic importance are:

1. Headache.
2. Mental irritability, alteration of personality, explosiveness, depression, inadequacy.
3. Cranial nerve disorder, particularly the third, eighth, second, fifth and seventh.
4. Insomnia.
5. Disorder of motor function, shivering attacks, stiffness, convulsion, paralysis, dysarthria, aphasia.

HEADACHE THE CONSTANT SYMPTOM

In seventeen of the patients, headache was the chief complaint, and other symptoms were disclosed only on interrogation. Pain in the head is the most constant symptom of every form of brain syphilis. In the series of cases upon which this article is based, it was not absent in any instance. The pain, always subject to paroxysmal exacerbation, is described by every conceivable adjective: throbbing, boring, splitting, terrible, agonizing. It is often referred to as affecting one part of the head, but usually the whole head aches. Everything save absolute rest makes it worse. The patient wants to keep quiet, he often holds the neck rigid when he moves, and the face has an expression of intense suffering. When the syphilitic process is predominantly of the meninges of the convexities, the skull is often sensitive to percussion. When it is of the base, rigidity of the neck is often marked, and usually ocular palsy or hemianopsia occurs. When the gasserian ganglion or the exits of the fifth nerve are implicated, there is profound hyperesthesia in the domain of that nerve.

The points, however, which I wish to emphasize are that headache may be the only symptom; that there may be nothing characteristic about it; that physical "pathognomonic signs" (Argyll Robertson pupils) may be entirely absent; that it may appear to be a simple migraine; and finally that the diagnosis can be made and substantiated only by laboratory tests.

The headache may be associated with dizziness, vomiting and optic neuritis, and in such instances we cannot exclude brain tumor until examination of the blood serum and the cerebrospinal fluid are made.

In our series there were a great many cases diagnosticated as headache and not a few as migraine. In fact, had we not resorted to laboratory tests, no other diagnosis could legitimately have been made. In some cases of headache, however, the real cause of the disease might be suspected in view of the history of syphilitic infection. Such was the case of a man aged 63 who was infected when 45 years old. It may be said in passing that there are few diseases more unrelenting than syphilis in an individual above 40. He complained of headache all through the head especially in and over the eyes; of occasional dizziness; of weakness and heaviness of the legs; of sensation in the arms as if they were dead and cold, of malaise and physical depression. Physical examination revealed no abnormality. The serum and spinal fluid Wassermann were both negative. The spinal fluid, however, contained 90 cells per cubic millimeter, and reduced Fehling's solution.

Syphilitic headache is a recurring headache. Cure it to the satisfaction of both patient and doctor, and when least expected, it will recur. I have under treatment now a woman of 39 in whom the sequence of events were: infection when 22; headache and dimness of vision at 27; disappeared while taking "mixed treatment"; seventh nerve palsy when 31; disappeared under inunctions; third nerve palsy when 33; cleared up under injections of mercury; headache and depression at 36; disappeared under prolonged salvarsan and mercury administration. The serum Wassermann remained negative for two years; then the patient was dismissed. She came back a few weeks ago complaining of headache. The serum Wassermann was positive.

DISORDER OF PERSONALITY

There is no disease save alcoholism that causes disorder of the individual's feeling tone, alteration of personality and mental habit so much as does cerebral syphilis. It is next to impossible to sketch such alteration, so much does it vary in different cases. In one it may be only a slight inattentiveness to social amenities at home and in business; in another it may be complete liberation of the customary inhibitions on which good conduct is founded. The individual of temperate habit may become reckless in his appetites, in his language, in his thrift; or he may become persecutory, depressed, sluggish and inert. In the majority of instances these "character alterations" are not volunteered either by the patient or his family, but sympathetic inquiry frequently elicits them. Such changes were noted in twenty-eight of the cases of our series. They are usually interpreted as "neurasthenia." It is rarely prudent to make the diagnosis neurasthenia until after a Wassermann test has been done. Of the multitude of sins that neurasthenia has been said to cover, cerebrospinal syphilis is an important one.

DISORDER OF SLEEP

Insomnia occurs at one time or another in the course of every case of brain syphilis. In many instances it seems to be directly dependent on the headache from which the patient suffers. In only a few instances is it the chief symptom. Four of the cases of our series were diagnosticated as insomnia until the laboratory tests informed us of the nature of the underlying condition. In several instances, however, inquiry revealed that insomnia had been a troublesome complaint for a considerable time before the appearance of symptoms which prompted the patient to come to the hospital. Even in cases in which lethargy, stupor and somnolency are conspicuous, a history of insomnia of variable duration has been obtained.

Insomnia, uninfluenced by treatment and protracted, not dependent on pain, is a danger signal and suggests beginning general paresis.

MOTOR DISTURBANCES

Disorder of the motor function, aside from the cranial nerve palsies, is a fairly frequent symptom of cerebral syphilis. It was the symptom for which the patient sought relief in twenty-three instances of our series. I do not include in these the cases of jacksonian epilepsy dependent upon gumma. In two instances the symptoms for which relief was sought was nervousness or shivering coming on in attacks and not accompanied by fever. One of these occurred in a young man who had Argyll Robertson pupils and the typical general paresis reaction of the serum and cerebrospinal fluid. Although he had no memory defect or dulling of insight, he was looked on as a general paretic. In the second case there were no physical signs, and had it not been for the laboratory aid, the diagnosis could not have been made. Rigidity of the neck and a complaint of stiffness of the extremities was not an unusual complaint.

In the majority of cases of meningovascular syphilis, especially when the vascular element predominates, paralysis of one or more extremities usually occurs.

In these cases premonitory symptoms of the attack are usually observable — headache, vertigo, a feeling of transient insecurity in standing or walking which may, however, reach a state of tumbling or pitching, a sensation of numbness or of no feeling in an extremity, and indescribable mental states: anxiety, apprehension and depression. On the other hand, none of these may be present. The patient may go to bed feeling quite well, sleep as usual during the entire night, and awaken in the morning partially or fully hemiplegic. The typical hemiplegia which results from vascular brain syphilis is the form which comes on in the day, preceded by some or all of the symptoms enumerated above. It usually develops gradually and incompletely without loss of consciousness. It need scarcely be said that the consciousness is often lost and for a long time; but as a rule the patient feels a gradually developing powerlessness in the arm or the leg which necessitates his sitting or lying. This act and the administration of stimulant not infrequently seem to cause a partial or complete disappearance of the paralysis, but within a few hours, or days at least, the paralysis is very likely to recur and with increased intensity. It depends on the seat of the lesion whether or not aphasia will be present. Next to this mode of attack, the most characteristic onset of hemiplegia of syphilitic cerebro-endarteritis is the contracture that develops soon after the hemiplegia occurs. It develops early and it is very intense. Mental and emotional disequilibrium is, in my experience, the most common manifestation.

Hemiplegia coming on gradually, or in attacks as it were, preceded by any of the symptoms enumerated above, not accompanied by a loss of consciousness, or attended with protracted loss of consciousness, and followed early by the development of spasticity, occurring in an individual under 50, is quite likely to be dependent on cerebral endarteritis of syphilitic origin. If the patient who has had such an attack has pupils that do not respond to light, there is no doubt whatsoever that such is the lesion; or if such patient gives a history of having had transient attacks of diplopia, it is probable that such is the lesion. Laboratory examination of the blood and of the cerebrospinal fluid may be relied upon to substantiate or deny the suspicions of the nature of the disease. It must be borne in mind, however, that the Wassermann reaction is more frequently negative in syphilitic endarteritis than in any other disease of the nervous system due to syphilis, so that a negative reaction in the blood and in the cerebrospinal fluid does not by any means put it wholly beyond question that the disease is due to syphilis. The laboratory tests must be repeated, particularly in patients who have been subjected to treatment.

CRANIAL NERVE PALSIES

The frequency with which the functions of the cranial nerves are disordered in syphilis of the brain has been habitually overstated by writers. This statement needs some explanation that it shall not be misunderstood. The cranial nerves are very frequently involved in cerebrospinal syphilis, but there are far more cases of cerebral syphilis without involvement of the cranial nerves than has heretofore been suspected.

The third, or motor oculus, is the cranial nerve oftenest affected.[1] Diplopia is the early symptom, and drooping of the lid the objective manifestation. One or all of the branches may be affected, and usually it is of one eye. As a rule it comes on gradually, often

1. Benario (Ueber Neurorezidive nach Salversan, etc., München., 1911) shows by statistics that the acoustic nerve is more frequently affected in early syphilis than any other cranial nerve. My experience has not been in accord with that.

at first intermittent in its manifestations, and it almost invariably disappears even without treatment. It may be associated with involvement of other cranial nerves, especially the fourth and the sixth; but, as a rule, it is the only cranial nerve affected. Upward of 50 per cent. of all cases of paralysis of the third cranial nerve is dependent on syphilitic meningovascular disease.

The optic nerve is affected next in frequency to the motor oculi. In the 100 cases on which this article is based, there were eight cases of optic neuritis, five cases of postneuritic atrophy. The majority of them came to me from ophthalmologists, which signifies that the chief symptom and the one that impelled the patient to consult a physician was disorder of vision. Headache was a symptom in every instance, but inquiry was necessary to elicit it. In three of the eight cases with optic neuritis, there were symptoms which suggested neoplasm. Had it not been for the aid of the laboratory, I would not have been able to make the diagnosis.

The fourth and sixth nerves are much less often affected than the third. The fifth was affected twice in our series, the seventh four times, the eighth six times, the ninth once and the eleventh once. In every one of these (save in two instances, one with affection of the fifth nerve and one of the seventh) there were other symptoms of meningovascular involvement. Deafness coming on abruptly or slowly in an otherwise healthy individual, disorder of equilibration, roaring in the ears or head, particularly if associated with slight vertigo, should always suggest to the physician that the serum and cerebrospinal fluid be examined.

The cranial nerves are affected at one time or another in every case of meningitis of the base, especially when the exudate is considerable. It is one of the diagnostic signs of brain syphilis, but that it shall be given correct valuation, it must be taken in conjunction with the other symptoms.

The most reliable objective symptom of cerebrospinal syphilis is the Argyll Robertson pupil. There are those who maintain that they have seen it in patients with other diseases than syphilitic diseases. I never have. I do not recall any published cases in which the Argyll Robertson pupil existed in individuals whose laboratory examination of the blood serum and cerebrospinal fluid were negative. The Argyll Robertson pupil is a symptom that is *rarely present* in early phases of meningovascular syphilis. In this series of one hundred cases it was absent in thirty-one, and chiefly in those cases in which the existence of syphilis as the cause of the symptom or symptoms was suspected only from consideration of the clinical manifestations and corroborated by the laboratory. It seems to me that when the luetic disease consists mainly of a mild meningeal exudate, which is subject to variation in intensity from day to day or week to week, even when not under the influence of treatment, the pupils do not lose their light reflex. It is only when the process has become chronic, or in cases in which the meningovascular infiltration is profound, that the Argyll Robertson pupil develops. I have recently discussed this matter in another paper not yet published.

DISORDER OF THE SENSORY SPHERE

Rheumatic or neuralgic pains in different parts of the body are very constant symptoms in syphilis of the nervous system, but they are rarely complained of by the patient until directly interrogated, because they are overshadowed by the other incapacitating symptoms.

That mysterious complaint of the Russian Jews, "breaking pains," which, like the "misery" seems to be the embodiment of all their woes, was found to be dependent upon cerebrospinal syphilis in seven cases of this series. The stiffness of the neck, of which many of the patients complain, is a root symptom, as is likewise the muscular atrophy which occasionally occurs. Paresthesias unassociated with definite vascular disease is in my experience a very uncommon symptom. But disturbance of the sensory nerves happens much more frequently than we surmise until we begin to search for such occurrence by making careful examination.

THE PREVENTION OF CEREBRAL SYPHILIS

What shall we do for the individual who has had the misfortune to become infected with syphilis, that his brain and its coverings shall not become affected? The answer is treat him immediately, vigorously, properly. In the vast majority of instances this will prevent it. In some it will not. In a certain percentage of cases, just how many cannot at this time be said, the spirochetes get into the perivascular lymphatic space of the central nervous system within a few days after infection, preceding often the full development of the so-called local lesion. No effort or art on the part of the physician, or the development of antibody on the part of Nature, can destroy or dislodge them. This explains the apparent paradox to which I called attention many years ago, namely, that cases of cerebral syphilis often develop in those who have had most vigorous antisyphilitic treatment.

There is greater unanimity of belief as to what constitutes adequate or proper treatment of syphilis today than there has ever been heretofore. It consists in the proper use of salvarsan and of mercury begun at the earliest possible moment after infection and kept up till all biochemical evidence of the disease has ceased, while the metabolism of the individual is maintained as nearly normal as possible. But the physician does not do his whole duty when he has accomplished this. He must solicitously watch the individual to see that no evidence reappears for months and even years after the apparent cure. As an index of such reappearance the Wassermann test of the blood serum and of the cerebrospinal fluid is the safest guide.

Until there is a definite unanimity of belief among physicians as to when the treatment of syphilis shall be begun, and some concert of action as to what constitutes the adequate treatment of syphilis, we cannot hope to make any considerable progress in the prevention of syphilis of the nervous system, save by educating the individual toward infection. That these do not exist at the present time cannot be denied. Basing my belief on the statements of physicians from different parts of the country, I say unhesitatingly that it is the customary practice for the majority of physicians to delay all constitutional treatment until the appearance of the so-called "secondary manifestations." Until syphilologists instruct students and physicians that the initial lesion is not infrequently itself a local manifestation of the generalized infection, and until they spread the knowledge that chancre is not necessarily an integral part of the syphilitic infection, we cannot hope to see syphilis properly treated.

It is also necessary that the minds of physicians be purged of the belief that we have in potassium iodid an antisyphilitic agency. I have so many times

dwelt on the fact that potassium iodid has not the slightest claim to be considered an agency of any value whatsoever to combat the activities of the pale spirochetes that I hesitate to revert to it again. And were it not for the fact that I encounter practically no cases of syphilis of the nervous system which have not been treated with potassium iodid, I should not again speak of it.

There is no more justification for considering potassium iodid an antisyphilitic agency, in the strict sense of the term, than there is for considering it an antituberculous agency.

In order that the forms of nervous syphilis that are not susceptible to cure by any treatment shall be prevented, it is necessary that these patients be treated during the course of the disease when the syphilosis is susceptible to treatment. That is, during the state of sensitization of the structures of the nervous system by the spirochetes.

There are two substances that kill the pale spirochetes — arsenic and mercury. Their administration encompasses the cure of syphilis. To administer successfully is an art. Some acquire this art early and easily, some never acquire it. It can never be acquired save by experience.

A NOTE ON THE OCCURRENCE OF PSEUDOREACTIONS ON THE SKIN

WITH SPECIAL REFERENCE TO THE SCHICK TOXIN TEST *

JOHN A. KOLMER, M.D.
AND
EMILY L. MOSHAGE, M.D.
PHILADELPHIA

While the value of the Schick toxin test for immunity in diphtheria has been fairly well established and accepted as reliable by numerous investigators who have agreed on the essentials, the practical value of the test is somewhat impaired by the occurrence of atypical and so-called pseudoreactions which may occur in susceptible and immune persons alike and which, even in the hands of experienced persons, are difficult or indeed impossible of differentiation from the true toxin reaction, especially in the first twenty-four hours after the injection has been made.

In conducting this test, especially on a large scale, a number of persons will present at the site of injection within twenty-four hours a small area of redness and infiltration which may be interpreted as a positive toxin reaction, whereas it may be demonstrated that they will react in a similar manner to an injection of the same amount of bouillon alone, and furthermore show that they are immune to diphtheria toxin by reason of the presence of more than one-thirtieth unit of antitoxin per cubic centimeter of serum. We are confident that we have misinterpreted such false reactions for true toxin reactions, and believe that others may have done likewise; certain technical factors, the study of all reactions for a period of at least forty-eight hours and longer, and probably the use of a control fluid are important or necessary to conduct and interpret the Schick toxin test properly, and under these conditions the percentage of persons immune to diphtheria will be found to be somewhat larger than commonly believed.

As far as we are aware, Park, Zingher and Serota[1] were the first to draw attention to pseudoreactions, ascribing them mainly to probable local anaphylactic reactions of a general character, due to the presence of protein substances in the bouillon used in cultivating the diphtheria bacillus and preparing the toxin, and describing them as of earlier development, more infiltrative, less sharply circumscribed, faintly or not at all pigmented and never followed by true scaling. Schick,[2] however, has not drawn particular attention to them. Owing to the difficulty we frequently experienced in detecting and differentiating these reactions from the true toxin reactions, we regarded all reactions evidently not traumatic as positive,[3] and unless a control bouillon is injected at the same time, we believe this is generally unavoidable especially if it is necessary to read the reactions at the end of twenty-four hours, as in the case of an outbreak of diphtheria when it is desired to immunize exposed nonimmune persons as soon as possible. Weaver and Maher,[4] Graef and Ginsberg[5] and Moody[6] have observed pseudoreactions as described by Park and his associates; Bundesen[7] does not mention them in his paper.

According to our studies in this subject, we would ascribe these false or pseudoreactions to the following:

1. To trauma due to the injection of a fluid containing tricresol into the epidermis of persons whose *skins are for some reason unduly sensitive*. We believe that this is the most important factor, and to obviate it as far as possible requires that the injection be of as small a bulk of fluid as practicable and made with a fine needle after proper cleansing of the skin.

2. To local anaphylactic reactions of a general protein character as described by Park. We subscribe to this view principally because of certain experimental data at hand indicating that general proteolysins are present in the body fluids which may digest such general protein substances as are contained in broth, or the protein substances may serve to saturate the unsaturated fatty acids (antitrypsin) of the blood serum followed by a release of tryptic activity and digestion of the patient's own serum protein (Jobling and Petersen and Bronfenbrenner), with the formation of proteotoxins capable of producing local reactions of redness and edema, rather than on the basis that we are capable of positively distinguishing these reactions clinically at the end of twenty-four hours from the true toxin reaction. These experimental studies were made in collaboration with Dr. Philip F. Williams in a study of Abderhalden's "protective ferments" and the nature of his pregnancy reaction, and will be described in other communications.

In order to study the pseudoreaction in relation to the toxin reaction, we have made intradermic injec-

* From the Laboratory of the Philadelphia Hospital for Contagious Diseases.

1. Park, W. H., Zingher, A., and Serota, H. M.: The Schick Reaction and Its Practical Applications, Arch. Pediat., 1914, xxxi, 481.
2. Schick, B.: Die diphtherietoxin Hautreaktion des Menschen als Vorprobe der prophylaktischen Diphtherieheitserum injektion, München. med. Wchnschr., 1913, lx, 2608.
3. Kolmer, J. A., and Moshage, E. L.: The Schick Toxin Reaction for Immunity in Diphtheria, Am. Jour. Dis. Child., March, 1915, p. 189.
4. Weaver, G. H., and Maher, L. K.: The Diagnostic Value of Intracutaneous Injection of Diphtheria Toxin (Schick Reaction), Jour. Infect. Dis., 1915, xvi, 342.
5. Graef, C., and Ginsberg, G.: Some Observations of the Schick Test, THE JOURNAL A. M. A., April 10, 1915, p. 1205.
6. Moody, E. E.: The Intradermic Diphtheria Toxin Test, THE JOURNAL A. M. A., April 10, 1915, p. 1206.
7. Bundesen, H. N.: Schick Reaction, THE JOURNAL A. M. A. April 10, 1915, p. 1203.

tions of various dilutions of bouillon in doses varying in bulk from 0.05 to 0.2 c.c. while conducting a series of Schick tests. In a number of tests, normal salt solution containing 0.25 per cent. tricresol was also used as a control fluid.

Two toxins were used: the first with a minimal lethal dose of about 0.0085 c.c., obtained from Dr. A. P. Hitchens of the Mulford Biological Laboratories, and the second with a minimal lethal dose of about 0.01 c.c., obtained from Dr. Ayer of the Bureau of Health Laboratory. Both toxins were used in one-fiftieth the minimal lethal dose and so diluted with sterile normal salt solution containing 0.25 per cent. tricresol that this amount of toxin was contained in 0.05, 0.1 and 0.2 c.c. of fluid. With a toxin having a minimal lethal dose of 0.01 c.c., the injection of one-fiftieth of this amount equaled the injection of 0.0002 c.c. of the undiluted toxin bouillon. By means of injecting the three different amounts all containing the same dose of toxin, we were able to study the influence of the amount injected on the question of traumatic reactions.

Sterile bouillons made in the same manner as that used in preparing the toxins were kindly furnished us by the laboratories named above. Both were sugar-free veal bouillons (*Bacillus coli* fermented) with the addition of 0.2 per cent. dextrose and an end-reaction of about + 0.85 in one (Mulford) and + 1.2 and 0.1 per cent. dextrose in the second (City Laboratory). To both bouillons was added 0.4 per cent. tricresol in order to liken them in this respect to the toxin bouillons, for, in the preparation of toxin, this amount of tricresol is added by routine to kill the culture prior to filtration. Both bouillons were then diluted with sterile normal salt solution in such manner that the dose injected contained 0.0002, 0.002 and 0.02 c.c. bouillon, equal to the amount of toxin bouillon injected (0.0002 c.c.) and 10 and 100 times this amount, respectively. These three dilutions were used in three different doses, namely, 0.05, 0.1 and 0.2 c.c., and in this manner we were able to study the influence of the amount of bouillon protein and amount of fluid injected in relation to pseudoreactions.

In addition to these, we have tested the irritant action following the intradermic injection of 0.2 c.c. of sterile normal salt solution containing 0.25 per cent. tricresol as a control fluid when conducting toxin tests.

In all instances, readings were made at the end of twenty-four and forty-eight hours, and in the majority of cases, observations were made over a period of several days.

The majority of the Schick tests with controls were conducted with persons in the measles, scarlet fever and diphtheria wards of the Philadelphia Hospital for Contagious Diseases; a number were among patients in the isolation and children's wards of the Philadelphia General Hospital. Scarlet fever and diphtheria patients had received antitoxin prior to the tests, while of the patients ill with measles, only those giving true toxin reactions were immunized with antitoxin.

The results of this study may be summarized as follows:

A. The great majority of pseudoreactions appear to be due not so much to the injury of the epidermis by the needle and the fluid injected as to a peculiar hypersensitiveness of the skin in certain individuals.

B. This hypersensitiveness was found most evident among persons in the various stages of scarlet fever. It was also more apparent among children who had measles than among normal children. Of 103 persons in the scarlet fever wards receiving an intradermic injection of the same amount of bouillon (0.0002 c.c.) as contained in the toxin, about 60 per cent. showed a false reaction at the end of eighteen hours, while at the end of forty-eight hours, the reaction persisted in but 7 per cent., and in seventy-two hours in but 2 per cent., the latter showing a pseudoreaction corresponding to the description given by Park and his associates. Therefore, in conducting the Schick test, an interval of forty-eight hours should be allowed before reading the results whenever time permits.

C. These reactions were characterized by areas of erythema which were rather poorly colored and defined, irregular in outline, measuring roughly from 0.3 by 0.3 cm., to as much as 1.5 by 2.0 cm., and accompanied by some edema at the site of injection. The majority of these reactions, however, did not measure more than 0.5 cm. in any diameter, and were located just about the site of the injection. We are not able safely to differentiate these false reactions from true toxin reactions at the end of eighteen or twenty-four hours; after this time the great majority of traumatic or false reactions subsided, while a few persisted for a day or so longer, whereas the true toxin reactions persisted for several days and left a pigmented area and well-defined scaling of the epidermis.

A number of the scarlet fever patients had received 2,500 units of antitoxin within ten days prior to the time these tests were made, and it was particularly apparent that some persons showed no reaction at all with either toxin or control fluid, while of those showing a reaction, the size, general appearance and duration of each reaction were almost identical with the toxin and bouillon control injections.

This peculiar skin hypersensitiveness among persons who have scarlet fever or who had just recovered from the infection is shown by the large percentage (46 per cent.) of similar reactions following the intradermic injection of 0.05 c.c. of sterile normal salt solution containing 0.25 per cent. tricresol. After twenty-four hours these reactions rapidly and entirely disappeared. Among normal persons this injection was practically always without effect.

D. Among persons with diphtheria, normal children and children with such diseases as vaginitis, digestive disturbances and the like as ordinarily found in children's hospitals, false pseudoreactions were found in about 7 to 8 per cent. at the end of twenty-four hours, and practically all of these reactions subsided and disappeared within forty-eight hours.

E. The amount of fluid injected bears a slight relation to the question of traumatic reaction in that the injection of 0.2 c.c. of fluid produced about 8 per cent. more reactions than when 0.05 c.c. were injected, both doses containing the same amounts of protein constituents and preservatives. What little difference exists in the percentage of false reactions following the injection of 0.1 c.c. and 0.05 c.c. of fluid is in favor of the latter, and when a proper syringe is at hand, it is better to inject the smaller dose (0.05 c.c.).

F. The amount of bouillon constituents injected was found to have less influence on the question of false reactions within the limits of this investigation than the total amount of fluid injected. For example, the percentage of false reactions following the injection of 0.02 c.c. bouillon was about 4 per cent., whereas with

0.0002 c.c., about 2.6 per cent., both doses being contained in the same amount of fluid, namely, 0.05 c.c. On the whole, therefore, it is better to use a highly potent toxin for the Schick test, one that requires high dilution, in order to reduce the quantity of protein and other constituents to a minimum. Schick used a toxin having a minimal lethal dose of 0.005 c.c., and injected one-fiftieth this amount so diluted as to be contained in 0.1 c.c.; this amount of toxin, therefore, corresponded to 0.1 c.c. of a 1:1,000 dilution.

CONCLUSIONS

1. In conducting the Schick toxin test for immunity to diphtheria, it would appear advisable to use as highly potent toxin as possible and to inject one-fiftieth or one-fortieth the minimal lethal dose so diluted with normal salt solution as to be contained in 0.05 or 0.1 c.c. The percentage of tricresol present should not be more than 0.25 per cent. In this manner the protein constituents of the toxin bouillon are reduced to a minimum owing to high dilution, and trauma of the epidermis is correspondingly reduced.

2. When time permits, it is better to read the reactions after forty-eight than after twenty-four hours, although in the presence of exposure to diphtheria it may be advisable and necessary to inspect the reactions and immunize nonimmune or positively reacting persons at the end of twenty-four hours.

3. The use of a control fluid composed of a bouillon diluted 1:10 or 1:100 and injected in the same amount as the toxin will aid in the detection of skin hypersensitiveness and pseudoreactions, and this is especially indicated when persons suffering with scarlet fever and measles are being tested. Otherwise the use of the control fluid is not absolutely necessary, although in the routine employment of the Schick test without a control injection, a small percentage of persons may be regarded after twenty-four hours as reacting positively on account of mistaking a pseudoreaction for a true toxin reaction.

In our experience, very small areas of erythema about the site of injection measuring, for example, about 2 or 3 millimeters in the largest diameter, may safely be regarded as purely traumatic reactions; but with larger areas we have been generally unable to differentiate at the end of twenty-four hours between the true and the false reaction, and for the purpose of caution usually regard them as toxin reactions and administer antitoxin.

Even under these conditions the use of the Schick test will obviate the necessity of giving antitoxin to about 40 or 50 per cent. of persons, and it is probably better in the presence of exposure to diphtheria to err on the side of giving antitoxin to an immune person than to withhold it from a nonimmune.

Second and Luzerne Streets.

Conservatism and Real Progress.—I will, however, venture to remind you that real progress does not consist in wiping out the past. That idea comes from Germany. A prudent veneration for the best of what has been left to us is ever a wholesome sign of the minds that are to guide the future. Well-gathered experience will always count for much in practical medicine. Knowledge that comes too quickly and too copiously has often to be recast and modified, and the elders do good service sometimes by calling a halt for meditation, for open minds and level heads. Moderation is one of the few things that last long in this world.—Sir Dyce Duckworth, *Lancet*, London, Nov. 28, 1914.

TUBERCULIN IN SURGICAL TUBERCULOSIS

WITH SPECIAL REFERENCE TO THE USE OF SENSITIZED BACILLARY EMULSION *

A. C. BURNHAM, M.D.
NEW YORK

Tuberculin, according to the generally accepted conception of its therapeutic status, is a valuable adjunct in the treatment of certain types of surgical tuberculosis. In many cases the results are too striking to be denied, the lesion showing improvement after the first or second dose, and rapidly progressing to a complete and final cure.

Sahli[1] is quoted as saying:

> All localized tuberculosis is suitable for tuberculin treatment provided the patient's system is not already overloaded with tuberculin.

According to this view, tuberculin treatment is indicated in every case of localized tuberculosis in a patient not too seriously ill to react to injection. Philip states the case more conservatively, and says in substance:

> In proportion as the disease is localized, the hope of successful treatment by tuberculin is increased. In a case of early tuberculous infection, when the process is limited to the lymphatic system, or in a case where, with further advance, the disease is still for the most part localized and the systemic disturbance relatively slight, the well regulated use of tuberculin affects the patient favorably and in many cases leads to a cure.

However, that there is a potency for harm in tuberculin is recognized even by its strongest advocates. Its administration requires careful selection of the cases, close observation of the patients and appropriate regulation of the dose. Because of these requirements, it has been argued that tuberculin has no place in the dispensary treatment of surgical tuberculosis, but should be confined to patients under hospital or sanatorium supervision. That even under the best conditions the treatment is often unsatisfactory is evidenced by the fact that the search for new preparations apparently never ceases.

Encouraged by the good reports following the use of sensitized gonococci and streptococci in infections due to the corresponding organisms, I have investigated the action of the sensitized bacillary emulsion of tubercle bacilli (S. B. E.) in cases of tuberculosis under dispensary control. The results are given subject to such handicaps as are always present in the dispensary treatment of surgical tuberculosis. These patients are difficult to control, and in many cases travel from clinic to clinic in search of relief, never staying long enough in any one dispensary to permit of satisfactory observation or treatment. Moreover, they are anxious to return to work, and stop attendance after improvement has begun, only to return later after a relapse has rendered further treatment necessary. For this reason, the cases chosen have been those in which operation was not indicated, or cases in which a tuberculous sinus persisted after one or more attempts at radical cure. It is in these cases that tuberculin treatment meets its greatest indication.

* From the Department of Surgery of Vanderbilt Clinic, College of Physicians and Surgeons, New York.

1. The Present Status of Tuberculin, Miscellany, THE JOURNAL A. M. A., March 14, 1914, p. 873.

Sensitized bacillary emulsion is prepared by growing tubercle bacilli in an antituberculous serum, and then washing the bacilli to remove the excess of serum. The bacilli are then prepared in an emulsion, 1 c.c. containing the equivalent of 5 mg. of the dried bacilli. In general, a sensitized vaccine (serovaccine, serobacterin) is a suspension of the pathogenic bacteria, living or dead, artificially sensitized by treating them with homologous immune serum. By this means, the amboceptors contained in the immune serum are made to combine with the bacteria and so sensitize them that, when injected, the complement normally present in the blood may combine with them directly. They were first introduced by Besredka[2] in 1902, and have since been elaborated by him and his co-workers. It is asserted that they give only a slight local reaction; that they cause no general reaction; that they may be given in larger doses and more frequently than non-sensitized vaccine, and that there is no negative phase.

In the cases tabulated the doses had to be guided almost entirely by the weight of the patient, the course of the disease, and the subjective symptoms. In only a few of the patients could an accurate temperature record be obtained. The cases were picked cases in that they were unsuitable for surgical treatment. They were, moreover, given any other form of treatment that might be indicated. Sinuses were dressed, tuberculous joints placed in plaster, and superficial abscesses punctured.

Excluding those cases which came only once or twice, fourteen cases were treated. Of these there was marked improvement in four cases. In these four cases improvement began soon after the treatment was started, and was so rapid and striking that clinically it seemed of necessity to be due to the use of tuberculin. Of the remaining cases, six improved while under treatment, three showed no apparent change, and one grew progressively worse. In Table 1 the

TABLE 1.—RESULTS OF TUBERCULIN (S. B. E.) TREATMENT IN CASES OF SURGICAL TUBERCULOSIS

Age and Sex*	Diagnosis	Pulmonary Tuberculosis	Weight		Local Lesion	Dosage	Remarks
			Before Treatment	After Treatment			
37 ♀	Tuberculous osteomyelitis of rib	Moderately advanced	119	118	Unimproved	Moderate	Pulmonary lesion slowly progressive
44 ♂	Tuberculous osteomyelitis of rib	Suspected	154	166	Improved	Moderate	Stopped treatment
24 ♀	Tuberculous elbow.....	None	129	126	Unimproved	Small	Diagnosis uncertain
26 ♂	Tuberculous ankle.....	None	143	140	Unimproved	Moderate	Gained 4 pounds, and ankle improved during first two months of treatment
22 ♂	Tuberculous wrist.....	None	131	137	Improved	Large	Improved under treatment; stopped treatment and returned to work and condition relapsed
21 ♂	Tuberculous wrist.....	None	151	151	Improved	Small	Patient stopped treatment; reported practically cured 6 months later
26 ♂	Tuberculous cervical adenitis	None	176	189	Cured	Large	Marked improvement under treatment
4 ♂	Tuberculous sinus of back	None	29	37	Sinus healed	Moderate	Six months later condition relapsed
4 ♀	Tuberculous sinus of neck	None	34	34	Sinus healed	Small	Marked improvement under treatment
12 ♀	Tuberculous cervical adenitis	None	106	113	Sinus healed	Small	Slight improvement under treatment; rapid improvement afterward
38 ♀	Tuberculous osteomyelitis of rib	Moderately advanced	129	129	Sinus healed	Moderate	Lung condition unchanged
6 ♂	Tuberculous cervical adenitis	None	49	50	Sinus healed; glands much smaller	Small	Apparently markedly improved
20 ♂	Tuberculous cervical adenitis	None	133	133	Unimproved	Moderate	General condition is improved
15 ♀	Tuberculous cervical adenitis	None	112	115	Cured	Large	Marked improvement

* In this and the following table, ♂ denotes male, and ♀ female.

The preparation which has been under trial is that suggested by Mayer of Berlin and further tested by Citron and Meyer. The original emulsion used in the cases under consideration was imported from Germany and diluted to the required strength before using. Stock dilutions from 1:1,000 down to 1:10,000,000 are made up every two or three weeks, and weaker solutions prepared when required.

A dose of 0.0000001 c.c. of the original solution has been advised, but I have felt that the results were better when the initial dose was considerably smaller (one tenth or even one hundredth of the foregoing dose). The dose is then gradually increased at intervals of from five to eight days until there is some sign of reaction, or until the patient is taking the pure emulsion.

In this preparation it is advised that the dose may be increased rapidly, making every dose from three to five times the preceding. I myself have had the most satisfactory results from giving small doses and increasing very slowly.

2. Besredka: Ann. de l'Inst. Pasteur, 1902, p. 1918.

results of the individual cases are shown, the dosage being indicated. In those cases in which the dose was always less than 0.000001 c.c., the dosage was considered small; less than 0.0001 c.c. was moderate, and more than 0.0001 c.c. was large. The interval between the doses was usually a week, but occasionally as little as four or five days, and in a few cases as long as ten days or two weeks.

Of ten improved cases, I have records of the patient's condition from six months to one year later in eight cases. Five patients had no further return of the condition, and in three there had been a relapse. In one case the relapse had been much more severe and extensive than the original lesion.

In the summary of the cases treated, the results were as follows: progressive, 1 case; no apparent change, 3 cases; improved, 6 cases; marked improvement, 4 cases.

These results compare unfavorably with those of Meyer,[3] who, in 1910, reported improvement in 86 per cent. of all cases. It should be borne in mind,

3. Meyer, F.: Ueber sensibilisierte Tuberkelbacillen Emulsion, Berl. klin Wchnschr., xlvii, 926, 1910.

however, that most of his cases were treated in the hospital and were no doubt carefully chosen.

In two cases in the series there was a coexisting infection of the lung moderately advanced and in the chronic stage. In one of these there was apparent improvement in the local lesion, but no change in the pulmonary condition; in the other case, both the pulmonary and local tuberculosis continued slowly progressive.

For purposes of comparison, the results of the use of sensitized emulsion in the dispensary control of pulmonary tuberculosis may be given here[4] (Table 2). Excluding those cases in which only one or two doses were given, tuberculin (S. B. E.) was given in sixteen cases.

These cases were also picked cases, and consisted principally of cases of a chronic type in patients who, for personal reasons, are unable to leave their homes and usually are obliged to continue to work at least part of the time. It should be recognized that these cases include those in which treatment is usually most unsatisfactory, and proper allowance be made in the consideration of the results. From the consideration of the table, it is seen that there was marked improvement in three cases and slight improvement in four cases. In view of the type of cases treated, this is a fairly satisfactory showing.

However, the management of the patients and the control of the dosage is much more difficult in pulmonary tuberculosis than it is in tuberculosis of the surgical type, and the most enthusiastic advocates of tuberculin treatment are much less optimistic regarding the treatment of cases in which there is a pulmonary lesion.

My personal experience with the sensitized tuberculin has been that the injections are no better tolerated than those consisting of corresponding doses of the ordinary bacillary emulsion. I have seen marked local and focal reactions after as little as 0.0001 c.c., and every attempt to increase the dose rapidly was followed by reaction which necessitated a modification of the dosage. A similar result made it necessary to abandon the attempt to give the injections at intervals shorter than five days.

Results following the use of very small doses have apparently been better than those in which a moderate dose was given at the beginning or in which the small dose was too rapidly increased.

In children, the first dose should not be over 0.000000001 c.c. of the original emulsion, and this should be slowly increased according to the nature of the case. I have sometimes increased the dose by making each injection double the preceding dose, but attempts to increase the dose more rapidly were usually unsuccessful. After reaching the dose of 0.0000001 c.c., it is better to increase even more slowly, that is, by increasing only from 10 to 50 per cent. Otherwise, the dosage and intervals have been similar to those advised in the use of the ordinary tuberculin.

TABLE 2.—RESULTS OF TUBERCULIN (S. B. E.) IN CASES OF PULMONARY TUBERCULOSIS

Age	Sex	Pulmonary Lesion	Dosage	Weight		General Condition
				Before	After	
31	♀	Incipient	Moderate	104	106	Unchanged
31	♂	Moderately advanced	Moderate	135	130	Progressive
23	♀	Moderately advanced	Small	120	120	Unchanged
39	♂	Far advanced	Small	113	113	Slight improvement followed by progression of symptoms
		Far advanced				
45	♂		Small	139	137	Progressive
40	♂	Moderately advanced	Small	140	140	Unchanged
28	♀	Far advanced	Small	125	118	Progressively worse
36	♂	Incipient	Large	137	139	Improvement
36	♂	Moderately advanced	Small	141	145	Improved
39	♂	Moderately advanced	Moderate	153	152	Improved
45	♀	Incipient	Large	107	113	Markedly improved
61	♂	Far advanced	Large	141	146	Progressive; died
42	♀	Moderately advanced	Large	114	113	Slight improvement
27	♀	Moderately advanced	Large	125	133	Marked improvement
26	♀	Far advanced	Large	93	93	No apparent change
26	♀	Moderately advanced	Moderate	158	164	Marked improvement

CONCLUSIONS

1. Sensitized bacillary emulsion of tubercle bacilli has apparently the same clinical action in surgical tuberculosis as the ordinary bacillary emulsion.

2. If there is less reaction following its use, the difference is so slight as not to be appreciable in the dispensary treatment.

3. Sensitized tuberculin, just as any other reliable tuberculin preparation, has its indications; but in surgical tuberculosis it should be recognized as a powerful therapeutic agent, and its contraindications and limitations kept ever in mind.

4. In this series of cases of surgical tuberculosis, in which the benefits of climatic treatment and hospital or sanatorium care were not available, the results of tuberculin therapy were favorable in the majority of the cases, and its use is fully justified in dispensary cases of this type.

140 West Seventy-Ninth Street.

4. From the Department of Tuberculosis, Presbyterian Hospital Dispensary, New York City.

Sugar in the Philippines.—An impetus to the cultivation of sugar in the Philippines has been given by the passage of the Sugar Central Act under which persons or corporations wishing to establish or extend the cultivation and manufacture of sugar are granted by the government an amount equal to the amount they are prepared to invest in the enterprise. Investigation is made by the government board before the grant is made. Sugar centrals are being established under this act and arrangements are made for the planters to send their cane to the mills for extraction, where they obtain a much larger percentage of sugar from the cane. This has stimulated planting. The government is endeavoring to introduce the Hawaiian variety of sugar cane into the islands, which is superior to that heretofore cultivated. Nurseries have been established, and at several points cane of this variety has been raised and distributed for seed.

A CLINICAL CONTRIBUTION TO OUR KNOWLEDGE OF CHRONIC PANCREATITIS *

MAX EINHORN, M.D.
Professor of Medicine at the New York Post-Graduate Medical School
NEW YORK

Although diseases of the pancreas were well known to clinicians for a long time and described under the name "lientery," an exact diagnosis could hardly be made during life until recently.

Operations, performed by surgeons during the last two decades, as well as functional examinations of the digestive tract and particularly the pancreas, have brought these conditions nearer to recognition. The diagnosis of chronic pancreatitis is even now rarely made, because the symptoms are so variable.

I should like to describe a few cases in which I have thought the diagnosis of chronic pancreatitis to be justified. In most of them the new methods of testing the pancreatic function were used and considered in making the diagnosis. Only three were brought to operation; in two of these the diagnosis of pancreatitis was made by the surgeon from the macroscopic appearance (the pancreas being thickened, enlarged, and harder than normal); in the third, the absence of carcinoma was established without the pancreas being particularly inspected.

The cases of chronic pancreatitis to be described may be subdivided into three classes:

1. Main symptom, diarrhea.
2. Main symptoms, gastralgia, constipation, weakness.
3. Main symptoms, diabetes mellitus, dyspepsia, weakness.

As representative of Group 1, I should like to describe the following cases:

CASE 1.—R. C., man, aged 46, with negative previous history, formerly drank considerably and was a moderate smoker. He denied syphilis. The present illness had lasted about two years. The principal complaint was pain in the abdomen, loss of weight, and at times diarrhea. He was treated differently at various times without improvement. About eight months before September, 1914, when I saw him, on the strength of roentgenograms showing a defect in the stomach, the diagnosis of cancer was made and operation advised. The latter showed nothing abnormal in the stomach beyond some adhesions, which were loosened. At the same time the appendix was removed. For about four months he improved and began then to suffer again from pains in the epigastrium, accompanied at times by vomiting. He did not vomit blood. The mental depression was intense. He kept on losing weight and strength.

Sept. 15, 1914, the stomach was dilated, extending two fingers' width below the navel; at times peristaltic restlessness was marked. The liver was considerably enlarged. The ascending colon was filled and dilated; there was borborygmus, and at times visible intestinal peristalsis.

Gastric contents, one hour after test breakfast: Hydrochloric acid, acidity = 40. In the fasting condition the stomach was empty.

Duodenal bucket test: Bucket passed pylorus; a faint trace of a blood stain at 55 cm.

The urine had a specific gravity of 1.010, and contained a small quantity of albumin and a few casts. In the stool undigested starch, fat and numerous muscle fibers were found. If the patient was kept on a meat-free diet for a few days, no blood could be discovered chemically. The digestive test capsule showed: return after fifteen hours, potato, fishbone, fat, meat, thymus present and hardly changed; nuclei very numerous (Fig. 1). Patient complained mainly of gas pressure and pains relieved by passing of flatus. There were from eight to twelve evacuations daily; they were copious, contained fat and some undigested food particles, which were visible macroscopically.

Under an appropriate diet and the addition of pancreon and diastase, his general condition improved markedly. Notwithstanding the abundant quantity of food ingested, however, the patient continued to lose steadily in weight. October 16, he had a severe attack of abdominal pain, which radiated to the thorax, causing dyspnea and rapid pulse. Morphin injections relieved him and he gradually rallied. His general condition, however, from now on grew rapidly worse. Although there were no new symptoms, no rise of temperature, no ischochymia (the stomach was found empty, even now, in the fasting condition) the patient succumbed, October 22, after going through another attack of pain and dyspnea.

The diagnosis of chronic pancreatitis was based on the existing lientery, with fatal termination, and absence of a possible carcinoma, as determined first by exploratory laparotomy and secondly by the absence of any sign pointing toward it.

CASE 2.—Mrs. R. N., aged 28, had been complaining for the last ten years of attacks of diarrhea. The first attack lasted about two weeks and was accompanied by quite a loss of blood from the bowels. The patient was very weak and tired. These attacks recurred every year until three years ago. Then they came more frequently, were of longer duration, and in addition to the blood there was a great deal of mucus. The patient also noticed a severe sharp pain in the lower right quadrant of the abdomen. She did not as a rule vomit. There never had been jaundice. She lost about 20 pounds since the onset. The appetite was fair. In the past three weeks the patient had a burning sensation on micturition and complained of both frequency of urination and scalding. Since then she had also felt feverish. She had to get up as often as six or eight times in one night to pass water on account of the diarrhea.

Physical examination of the thoracic and abdominal organs failed to reveal anything abnormal.

Gastric analysis: One hour after Ewald's test meal 35 c.c. of clear liquid were obtained which did not show any mucus; the reaction was slightly acid to litmus. The food particles were not digested; there was no free hydrochloric acid; total acidity = 6.

The feces were yellowish, fluid, and contained no blood, parasites or parasitic ova; there were present, however, a great deal of fat, starch, and food remnants, mixed with mucus.

Vaginal examination showed slight infiltration of the right fornix.

Roentgen examination was negative.

The blood showed nothing abnormal.

Digestive bead test: Everything had disappeared after thirty hours.

Examination of the duodenal contents: Amylopsin present, trypsin trace, steapsin absent.

The diagnosis here was founded on the behavior of the bowels (diarrhea) in connection with the result of the examination of the duodenal contents, showing diminished quantities of trypsin and an entire lack of steapsin.

CASE 3.—Mrs. H. M. W., aged about 40, had always been quite well until about two years ago, when she began to suffer from her digestive tract. She had persistent heartburn, frequent vomiting and severe profuse diarrhea. Sometimes the symptoms were less severe, but they never were entirely absent. During these two years she had lost about 60 pounds, having previously been quite stout. She was very weak and was confined to bed.

At the examination the patient looked pale. The skin could be lifted in large folds. She complained of severe pains all over her body, heartburn, diarrhea and weakness. The thoracic organs were normal. The stomach was much dilated and reached a hand's width below the navel; the liver was not enlarged.

* Read before the Section on Practice of Medicine at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

One hour after a test breakfast, hydrochloric acid was present, an acidity of 100, no blood. The thread test proved the permeability of the pylorus and showed no blood spots. The bead test showed potato, meat and fat present. In the feces much undigested starch, numerous muscle fibers and an excessive quantity of fat were found. With the use of alkalies and pancreon in connection with diastase the patient recuperated and began to gain in weight.

The diagnosis here was based entirely on the symptoms and the result of the examination of the feces, and is strengthened by the beneficial influence obtained from the administration of pancreon, which replaced the missing pancreatic secretion.

CASE 4.—A. E., boy, aged 16 years, born in San Domingo, had been living in the United States for the past five years. He had twice had pneumonia when a baby and had had trouble with his stomach for the past eleven years, feeling well only at times. The present illness began about 1913, when he had mumps. Since that time he had progressively lost weight. Diarrhea began about this time and pains in the abdomen. In February, 1914, he began to vomit, first his supper and later on his dinner. He did not vomit breakfast until three months before I saw him. In November, 1914, he complained of chills and cold feet. He belched a great deal. Vomiting had increased until at the time of examination, Feb. 12, 1915, he vomited at times while eating.

At this time his appetite was not good, but he grew very thirsty on account of the vomiting and the diarrhea. Food did not taste good as a rule. He very seldom had pain and did not belch. The bowels were very loose, and about three weeks before they moved fourteen times in one night. As a rule the stools were greenish and with much mucus. The patient complained very much of weakness.

The physical examination of the chest organs failed to reveal anything abnormal. The stomach was somewhat dilated, the greater curvature extending to two fingers below the navel. The liver was slightly swollen, overlapping for more than 1 inch the right costal margin.

The gastric contents one hour after a test breakfast showed absence of free hydrochloric acid and almost neutral reaction, but presence of rennet ferment.

The urine was free from sugar or albumin.

The blood showed: hemoglobin, 75 per cent.; red blood corpuscles, 4,400,000; white blood corpuscles, 7,600; polymorphonuclears, 67 per cent.; lymphocytes, 30 per cent.; mononuclears, 3 per cent.

The bead test revealed: return of beads after thirty hours; potato, fishbone, catgut, fat, thymus, nuclei present.

The duodenal contents showed, February 16, color golden yellow; somewhat turbid; alkalinity = 20; amylopsin, 5 mm.; steapsin, 1 mm.; trypsin absent; rennet present.

The diagnosis of chronic pancreatitis was based on the clinical symptoms, diarrhea, vomiting and epigastric distress in conjunction with the result of the fecal examination, the bead test (presence of most test substances), and the analysis of the pancreatic secretion, which showed absence of trypsin and very little steapsin.

The following cases belong to Group 2, characterized by gastralgia, constipation and weakness:

CASE 5.—Mrs. J. R. S., aged about 67, had been troubled for the last four years with distress after meals and considerable flatulence. Her appetite was poor, her bowels constipated, and she slept poorly. Within a year she had lost 20 pounds.

The physical examination, Sept. 8, 1909, revealed nothing abnormal in the thorax nor any palpable tumor in the abdomen. The urine was normal; knee reflexes present. The blood showed slight anemia.

The gastric contents one hour after Ewald's test breakfast showed, Sept. 10, 1909, very little fluid; bread particles not changed; hydrochloric acid absent, total acidity 4, no food stagnation.

The bead test, Nov. 9, 1909, revealed the appearance of beads after sixteen hours; fat, potato, thymus present; nuclei had disappeared.

The diagnosis of achylia gastrica and intestinal dyspepsia (fat and starch variety) was made and the patient treated accordingly.

With the aid of various digestives (principally diastase and pancreon) the patient got along fairly well during the next four years, gaining slightly in weight and feeling rather comfortable. During this period the gastric contents were frequently examined, but always showed the same result, namely, achylia gastrica.

Feb. 28, 1910, the duodenal contents were examined. They were golden yellow, clear, and revealed the presence of the three pancreatic ferments.

During the summer of 1913 the patient began to manifest some graver disturbances. The distress in the abdomen was more pronounced, her appetite poorer, and the constipation became more marked. In August slight jaundice developed, accompanied by a low fever, for about one week. The liver at that time was somewhat enlarged, but no distinct hardness could be found. The blood showed some leukocytosis for a while. The urine contained no bile, but some urobilinogen. The patient lost some in flesh and grew considerably weaker. During September and October, 1913, the thought of a beginning neoplasm could not be positively dismissed. Examinations of the gastric contents and stool failed to show anything in this line. Roentgenoscopy likewise showed an entirely negative finding as to the presence of a neoplasm in the digestive tract (Fig. 2).

The liver swelling then subsided, the skin cleared up, and the patient again was somewhat stronger, but she never entirely regained her former state of health.

The pancreatic function was now watched and found to deteriorate steadily. The following examinations of the duodenal contents were made during this period; Nov. 9, 1913, the duodenal contents were golden yellow, alkaline, tinged with blood; amylopsin + 2 mm.; steapsin + 2 mm.; trypsin absent.

Jan. 13, 1914, the duodenal contents revealed the absence of all the three ferments.

Feb. 2, 1914, the duodenal contents showed amylopsin + 8 mm.; steapsin + 0.5 mm.; trypsin absent.

Feb. 11, 1914, the duodenal contents reveal the absence of all three pancreatic ferments.

The further course of the disease was briefly as follows: The patient grew steadily worse, becoming weaker, with anorexia and distress constantly increasing. During the month of February there was a return of the jaundice, the urine containing merely urobilinogen, but no bile. The icterus disappeared a few days later. During March the patient fainted several times. It became necessary to supplement the nutrition by the employment of glucose solutions by the Murphy drip. The inanition persisted and the patient began to suffer from hallucinations (due to anemia of the brain) and then became comatose. There was no vomiting, no ascites, and the patient died, April 17, 1914, with a preagonal rise of temperature.

We could make a fairly certain diagnosis of chronic pancreatitis in this case. Here the examination of the duodenal contents was of the utmost importance. It showed a gradual diminishing activity of the pancreatic secretion, and besides there occurred three times periods characterized by jaundice and swelling of the liver, and bile was found at the time in the duodenum. Since no new symptoms pointing toward malignancy occurred toward the end of life, we must attribute everything to the chronic pancreatitis.

CASE 6.—Mrs. M. R., aged about 54, had complained for the last eighteen months of frequent attacks of abdominal pain accompanied by vomiting. The attacks came on at intervals of from three months' to one month's duration. The pains were severe and often required hypodermic injection of morphin. During the interval the patient felt comparatively well. She, however, ate very little and had been constantly losing flesh (about 40 pounds).

The physical examination, June 18, 1914, revealed nothing abnormal in the thorax. The stomach was markedly dilated, extending a hand's width below the navel. The gastric contents show a normal acidity, no food stagnation, and no occult blood.

The patient was encouraged to eat and was given nerve sedatives. She did not, however, improve, and after a few weeks had another severe attack of pains and vomiting. The attack was accompanied by a rise in temperature which lasted

two days. This attack was followed by pronounced anorexia and almost constant nausea.

September 3 the patient entered the German Hospital.

The duodenal bucket test showed a permeable pylorus and no signs of ulceration. The duodenal contents were then aspirated and examined; they presented a turbid, dark greenish-yellow appearance, were alkaline, and showed absence of the three pancreatic ferments.

September 4 the patient had an attack of pain, with slight swelling of the liver and rise of temperature. September 5 she had a severe chill and a temperature of 103.5, which, however, became normal on the 6th. During the last attack, slight icterus of the sclera was noticed. The urine, however, contained no bile.

The examination of the feces showed absence of blood, presence of much undigested starch, muscle fiber and fat crystals.

The diagnosis of severe cholecystitis due to gallstone and chronic pancreatitis was made, and an operation advised.

The latter was performed by Dr. F. Kammerer, September 11, and consisted in cholecystectomy and choledochotomy, with removal of stones and drainage of the hepatic duct.

At the operation the whole gallbladder was found embedded in adhesions; several stones were found in the common duct, near the ampulla of Vater. The pancreas was found enlarged and somewhat harder than normal.

The patient rallied somewhat after the operation. There was, however, great difficulty in feeding her. She frequently vomited, and did not retain rectal alimentation. She grew gradually weaker and died, October 14, from inanition.

The diagnosis here was gallstones and chronic pancreatitis. The latter condition was recognized from the lack of pancreatic ferments in the duodenal contents and from the condition of the organ at the time of operation.

CASE 7.—Mrs. J. H. L., aged about 54, had been suffering for four months from severe pains in the epigastrium. She lost her appetite and became progressively weaker and thinner. Four weeks before her condition grew considerably worse. An irregular fever with chills developed. The pains were much more severe and the conjunctiva showed an icteric tinge. Patient had lost 40 pounds since the beginning of her illness. She was operated on by Dr. F. Torek. A thickened and swollen pancreas was found.

At the time of operation it was difficult to decide whether there was a carcinoma or simple inflammation of the organ. There were no gallstones. A simple gallbladder drainage to the outside was established.

About three weeks later, March 22, 1912, I saw the patient for the first time. She was very apathetic, her appetite was very poor, and she looked cachectic. Physical examination did not reveal anything abnormal.

The blood showed 2,300,000 red blood cells and 11,000 white blood cells.

Examination of the stomach contents showed absence of hydrochloric acid, a total acidity of 80, and the presence of rennet ferment.

Fig. 1.—Result of bead test in Case 1: Sept. 26, 1914, return after fifteen hours (left half of illustration: potato, fishbone, fat entirely present; thymus present; nuclei partly present. Oct. 10, 1914, return after twenty hours (right half of illustration): catgut, fishbone, thymus, half fat, one-fourth potato present; nuclei partly present.

The digestive bead test showed the presence of meat, fishbone, potato, thymus, and fat. In the stool many undigested substances were found, particularly muscular fibers, starch and fat.

The fluid obtained from the gallbladder was very turbid, greenish yellow, and showed the presence of amylopsin, steapsin and trypsin.

Since the patient became weaker from day to day, I thought it would be better to protect her from the daily loss of pancreatic secretion and retain it in the organism.

After a consultation with Dr. Torek we both thought it advisable to subject the patient to another operation, in order to close the gallbladder fistula and to make a cholecystenterostomy. When the abdomen was again opened, a renewed examination of all the organs was made and no tumor found. The pancreas was somewhat harder than normal, but no longer enlarged. A few days later the patient died of inanition.

The diagnosis based on the necropsy in vivo during the operation was chronic pancreatitis without a tumor. This showed that even severe pancreatitis may occasionally show the presence of all three ferments.

CASE 8.—Mrs. R. W., aged 54, had been complaining for eighteen months of cramps occurring usually from one-half to one hour after meals in the lower part of the abdomen, and occasionally of diarrhea. Sometimes the symptoms abated and patient felt better for a few weeks; but then the attacks would recur. She had considerable pain in the rectum on defecation and otherwise. Six months ago she was operated on for gallbladder trouble without result.

Nov. 2, 1914, the Wassermann reaction was negative. The physical examination of the chest and abdomen revealed nothing abnormal. The bead test showed fishbone present, catgut trace, half fat, one-third potato, and half thymus present; nuclei disappeared.

Duodenal contents: amylopsin + 6 mm.; steapsin absent; trypsin absent.

Stomach contents were examined, Nov. 5, 1914. Hydrochloric acid was absent, blood absent, nothing microscopically. Stools were clay colored, no blood. The thread test showed no blood on the thread. Bile stain from 49 to 112 cm.

The diagnosis of achylia gastrica and chronic pancreatitis was made. The bead test showed a lack of gastric and intestinal digestion (pr sence of fishbone, catgut, fat and potato), and the duodenal contents revealed a lack of steapsin and trypsin.

As representatives of Group 3, diabetes mellitus, dyspepsia and weakness, I should like to cite the following cases:

CASE 9.—L. K., man, aged 60, cigar maker, Dec. 10, 1914, complained mainly of weakness and headache. Ten years ago he began to suffer from diabetes. During this time he was treated off and on in various hospitals. Recently he grew somewhat negligent in his diet and consequently began to suffer. Although his appetite was very good, he had lost in weight, and became so weak that he could scarcely stand.

He urinated a great deal. He had frequent frontal headaches, some dimness of vision and constipation. He complained of insomnia, cough, without hemoptysis, chilliness, and a sensation of fever. He had never had any severe illness, and denied syphilis and gonorrhea. Ten years ago he was operated on for a septic infection of his little finger. Off and on he drank some wine, took two or three cups of coffee or tea and smoked two cigars daily. The appetite was good, stool regular. Two brothers and two sisters died of diabetes.

The patient was a well-nourished man. The mouth and tongue were clean. In the upper jaw he had no teeth, in the lower jaw only a few in poor condition. He had a slight pharyngitis. Nothing in the lungs. The cardiac dulness extended 2 cm. to the right and 10 cm. to the left of the midsternal line. Sounds were pure. Pulse was regular and full. The abdomen showed nothing abnormal. The knee reflexes were present but diminished. Pupillary reflexes were also present. The urine showed some albumin and from 1/6 to 0.5 per cent. of sugar; no casts.

Stomach analysis: Hydrochloric acid, 62; total acidity, 83; no blood, microscopically negative.

December 11, Wassermann and luetin reactions were negative.

December 16, the duodenal contents were greenish-yellow; somewhat turbid; alkalinity, 10; amylopsin, + 2 mm.; steapsin, + 15 mm.; trypsin, 0.

Weight on admission, 134½ pounds; weight December 21, 132 pounds.

Dec. 24, 1914, Dr. Torek amputated the right small toe in the middle of the metatarsal bone, as it was necrosed. No temperature. Secretion of urine about 1,500 c.c. daily.

Jan. 29, 1915, the duodenal contents were dark yellow-green; somewhat turbid; alkalinity, 25; amylopsin + 2 mm.; steapsin, + 3 mm.; trypsin, + 10 mm.; rennet, absent.

The diagnosis of chronic pancreatitis was here based on the absence at times of either trypsin or rennet in the pancreatic secretion, with a coexisting diabetes.

Case 10.—W. W. B., man, aged 55, had been well all his life with the exception of an attack of malaria at the age of 22. The present trouble began about two and one-half years ago, when he first noticed a loss of weight and pains in the legs. He lost about 20 pounds in three or four months. A physician, whom he consulted, told him he had diabetes. He was treated and felt well, although he did not gain in weight. After having traveled a short time he came to New York weighing 134 pounds; he had again lost 18 pounds during the last five months and was much weaker. Two weeks before his arrival in New York he had an attack of gastritis with pains in his stomach lasting for one day.

Dec. 18, 1914, the thoracic organs were normal with the exception of some fine râles under the right and left shoulder blades. The stomach was much dilated, reaching nearly to the symphysis; the liver was much swollen, palpable below the costal margin, but not hardened. The skin had a slight icteric tinge.

The daily average quantity of urine was 2,600 c.c.; the amount of sugar, smallest quantity 2.5 per cent., the largest quantity 6.2 per cent., average 4.2 per cent. Acetone was at first present, but not later.

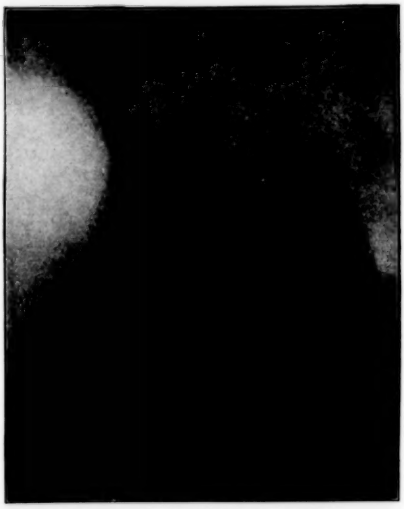


Fig. 2.—Stomach in Case 5, showing no neoplasm.

December 23, examination of the stomach contents revealed: hydrochloric acid present; total acidity, 80; blood reaction (guaiac), slightly positive.

December 28, examination of stomach contents revealed: hydrochloric acid, 44; total acidity, 76; no blood reaction.

Feces: No parasites; on admission traces of blood, later negative.

Examination of blood revealed: hemoglobin, 68 per cent.; red blood cells, 4,230,000; white blood cells, 10,600.

From December 21 to 24 the patient had some fever, the temperature ranging from 99.5 to 101.4 F. Thereafter the temperature was always normal.

The bead test of December 31 showed appearance of beads in stool after forty-two hours; everything had disappeared excepting fat.

The duodenal contents, examined in the fasting condition, December 28, showed the presence of yellowish, somewhat turbid bile of an alkaline reaction, and revealed amylopsin + 5 mm.; trypsin + 1 mm.; steapsin, absent.

The duodenal contents were again examined on the same day, about one hour after the ingestion of bouillon into the stomach, with the following result: amylopsin, + 2 mm.; trypsin, + 1 mm.; steapsin, + 2 mm.

Jan. 13, 1915, the duodenal contents were examined about three hours after the ingestion of koumiss into the stomach. The secretion obtained looked yellowish-green, somewhat turbid, of faintly acid reaction, and showed the absence of the three pancreatic ferments.

On alkalies, pancreon and a liberal diet, the patient improved considerably. Before leaving the hospital, Jan. 19, 1915, he had gained 10 pounds in weight, in the last five weeks, and felt much stronger. The amount of sugar, however, remained the same, but there was no acetone present. The liver has also been reduced in size, so that it approached more the normal condition, while the skin had entirely cleared up.

The diagnosis of chronic pancreatitis was made on account of the severe diabetes and a faulty pancreatic secretion; once steapsin alone was lacking, and another time all the three pancreatic ferments.

EPICRISIS—SYMPTOMATOLOGY AND DIAGNOSIS

If we at first look at the cases in Group 1, we find the following symptoms prominent:

1. Severe profuse diarrhea, attended with the passage of large quantities of feces; plenty of undigested food particles are found in them, which are easily recognized macroscopically.

2. General weakness.

3. The digestive test capsule shows a great many of the test substances undigested.

4. Examination of the duodenal contents reveals either an entire absence or a very faulty pancreatic secretion, as, for instance, frequently one or two of the ferments, and at times even all of the three ferments, may be entirely absent.

In Groups 2 and 3 we find similar conditions, with the exception of the diarrheas, in place of which we find constipation. In Group 3 we find another important additional symptom; the presence of sugar in the urine.

As, according to Opie, in the majority (87 per cent.) of cases of diabetes we find an affection of the islands of Langerhans in the pancreas, we can generally make the diagnosis of chronic pancreatitis in such cases without much difficulty. For it is clear that disease of these islands will lead to secondary involvement of the surrounding tissues of the pancreas. If, therefore, we find a diabetes with great weakness, loss of weight and dyspeptic symptoms, we must think of disease of the pancreas. If, in addition, examination of duodenal contents shows deficient pancreatic activity, the diagnosis of chronic pancreatitis is almost certain.

A transient icterus with slight engorgement of the liver was found in two cases (Cases 5 and 10), and may be explained on the hypothesis that occasionally the head of the pancreas becomes somewhat more acutely inflamed, with associated edema of the gland and subsequent pressure on neighboring organs. Thus, the ductus communis may be partially compressed, leading to mild jaundice. When the inflammation of the pancreas subsides, the icterus disappears and the liver returns to its normal size.

PROGNOSIS

The prognosis of chronic pancreatitis must always be considered grave, although some cases may be distinctly improved.

Those cases in which the chronic pancreatitis is the result of the presence of gallstones, when these have been removed and the gallbladder drained, present the most favorable outlook. In general the prognosis will depend on the extent of the pathologic process. The more the gland is destroyed, the worse the prognosis.

Clinically the prognosis may be based on the quantity of food that is still being assimilated. If the assimilation is poor, the prognosis is bad, and vice versa.

TREATMENT

There are two points to govern us in the treatment of such cases: first we must try to remove, if possible, any etiologic factor causing the disease, and, secondly, we must try to obtain a better assimilation of the food. Etiologically, alcohol and tobacco play a great rôle in producing chronic pancreatitis, and we must therefore forbid these or at least greatly diminish their consumption. Gallstones must be removed surgically and a possible cholecystitis treated by drainage, in order to relieve the pancreas.

A thorough study of the processes of digestion and a correction of any deficiencies present will lead to an improvement in the assimilation of food. We often find that achylia gastrica or subacidity, more rarely hyperchlorhydria, are associated with pancreatitis. Here we have to adapt the diet and medicinal treatment to the conditions present. The impaired pancreatic function will best be helped by giving preparations, made from this important gland (pancreatin or pancreon). In fact, these extracts here often work very favorably.

As to diet, we have to make use of entirely liquid substances in those cases in which the assimilation is very poor (lientery), in order thus to facilitate absorption. Rest, good fresh air, general massage and encouragement are of importance, and will materially contribute to the comfort of the patient.

20 East Sixty-Third Street.

FRONTAL SINUS SUPPURATION WITH RESULTS OF NEW OPERATIVE PROCEDURE *

HOWARD A. LOTHROP, A.M., M.D.
Visiting Surgeon, Boston City Hospital; Assistant Professor of Surgery in the Harvard Medical School
BOSTON

Chronic frontal sinusitis is a common condition and many cases are obstinate and difficult to cure. Many of the external operations are disfiguring and often unsuccessful. Intranasal methods are of value in the preliminary treatment in all cases and frequently result in a cure in the early and less obstinate types. The attempt to remove thoroughly the nasal floor of the sinuses by intranasal operating is unwise; first, because it cannot be done without actually inspecting the region, and, second, because the risks are too great. The following cases illustrate a type of operation to be used in all instances in which preliminary intranasal treatment fails to cure, in all cases of fistulas, and in all cases in which an external operation is demanded. All steps of the operation are open to inspection, a minimum scar results, and a maximum opening into the nose persists.

Fig. 1.—Anterior view frontal region; projected outline of opening into sinus through which all extranasal operating is performed on both sinuses: *n*, nasal bone; *np*, nasal process; *s*, septum; *l*, lacrimal bone.

Frontal sinusitis is caused and kept up by infection and obstruction; but, if very free drainage is established and the sinus is made easily accessible to intranasal treatment, all fistulas will close, all subjective symptoms will disappear, and the discharge from the sinus will cease or will be reduced to a minimum.

The important anatomic relations and the technic of operation have been published in the *Annals of Surgery*, June, 1914; hence I shall only briefly enumerate the steps in technic which are our final conclusions, based on the results of all the operations. The cases are reported in order of operation; the few earlier ones were mine, the others were patients of Dr. Oliver A. Lothrop and we have worked or consulted together on all of them.

* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

REPORT OF CASES

CASE 1.—A man, aged 55, was sent to me by Dr. George Sanborn, Dec. 21, 1910, after vaccines had failed to give relief for double chronic frontal sinusitis. He had always been a farmer and, although otherwise in excellent physical condition, was obliged to give up an extensive farming business because of disability. As will be seen by the history, his case had resisted all treatment and I found it a most obstinate

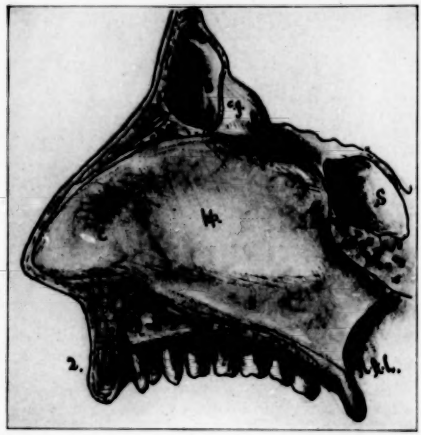


Fig. 2.—Nasal septum, also the dense bone below frontal sinus (*F*) in the median line; *ns*, nasal bone; *ns*, nasal spine of frontal bone; *cg*, crista galli.; *cp*, cribriform plate; *S*, Sphenoidal sinus; *pp*, perpendicular plate; *c*, triangular cartilage; *v*, vomer.

one. It was during the effort to relieve this condition that the technic used in all subsequent cases was devised. Hence, this case will be considered in greater detail.

In August, 1906, he consulted a specialist because of dizziness, headache, and nasal discharge of some months' duration and underwent some intranasal operation on either side. This afforded no relief. In June, 1907, another specialist continued intranasal treatment. In July, the left antrum was opened into the nose and an external operation done on the left frontal sinus, and in August the same frontal sinus was operated on. Shortly afterward the right frontal sinus was opened by the external route. From September, 1907, until December, 1910, when first seen by me, an external fistula persisted on either side, from which escaped continuously much thick, purulent exudate. Meanwhile, he underwent many minor intranasal attempts to establish nasal drainage and several external efforts were made to cure his frontal sinusitis. During this period he continued to suffer from headache, much dizziness and profuse discharge.

On Jan. 5, 1911, I performed my first operation. An incision was made in the old scar in either eyebrow and it was found that considerable of the anterior facial walls had been removed, extending well down to the nasal process on either side. The sinuses were large and filled with pus and granulations, and the openings into the nose were much obstructed with cicatricial tissue and granulations. No bone was removed from the facial wall, but the openings into the nose were enlarged as much as possible with curets, the sinuses were curetted, and a small rubber dam drain was left in either incision for twenty-four hours. One week later both wounds healed but remained so only about a week when he relapsed into his former condition.

The prognosis appeared rather dubious. It was evident, according to the principles of drainage and the healing of suppurating cavities, that failure was due to inefficient drainage. Careful study of specimens showed that much larger openings from the sinuses could be obtained by removing the dense mass of bone directly behind the base of the nose, made up in part by the frontal and nasal and the nasal process of the superior maxillary bones. It was observed that this region was inaccessible through the opening in the sinus if the ordinary bone instruments were used, and was too dense to be removed by curets. It was found experimentally that this could be removed by burr drills of different sizes with more or less curved shanks, just as a dentist reams out the cavity of a tooth. When both sinuses were involved, it was found practicable to remove the interfrontal septum and its continuation downward on to the perpendicular plate of the ethmoid. In other words, the whole nasal floor of both sinuses could be taken away. The extra size of this opening, compared with what is usually taken away, was surprising. It was demonstrated later, in cases in which only one sinus was involved, that the combined floor of both sinuses should be removed, and this is accomplished through the single external opening on the affected side.

On Feb. 8, 1911, the new technic was carried out and both external wounds closed. He made a good recovery from the operation and was relieved of most of his pain and dizziness, and the exudate passed into the nose. As time went on the cicatricial tissue within caused the scar tissue of the incision to be drawn in because so much frontal and other bone had been removed in the earlier operations, and this tended to narrow the region of the new opening into the nose. On April 30 there appeared a fistula in the right sinus which closed again in forty-eight hours after the granulations were curetted intranasally. The sinuses were very accessible by this route as so much bone had been burred out. On June 13 the right sinus opened again externally and four days later

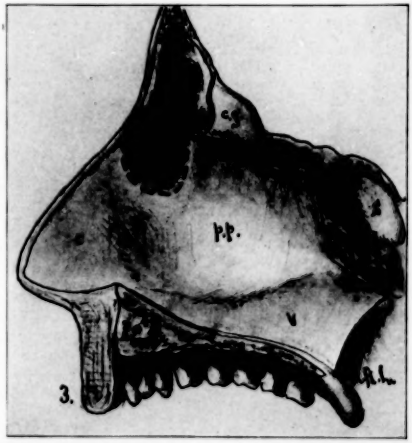


Fig. 3.—Nasal septum seen in Figure 2 after removal of floor of both sinuses, looking into the right sinus. The median projection of the crista galli and cribriform plate region is shown, also the portion removed by burrs from the perpendicular plate of the ethmoid, thus allowing easy access to both sinuses through either nostril.

the left sinus broke out, having remained closed since the operation of February 8. By means of intranasal treatment during July the fistulas remained closed most of the time, but the depressions over the sinuses increased and tended to narrow the exit into the nose so that the exudate had less chance to escape. This would not have occurred if there had not been a previous extensive destruction of the anterior

sinus wall toward the base of the nose, as is made in the Killian operation. In order to meet this complication a technic was devised and carried out on September 14 to epidermize the sinuses at this point by inverting a flap of skin from the upper lids (*Annals of Surgery*, June, 1914). This is the first attempt that I know of to epidermize the sinuses, and the desired object was attained. The incisions were closed and have never since reopened. Inspection of

Fig. 4.—Outer wall of right nasal fossa. Arrow passes from sinus to infundibulum, between ethmoid bulla (*B*) and unciform process (*u*). Portion of middle turbinate removed: *ag*, agger nasi cell at front end of middle turbinate.

the sinuses at this time showed that the distal angles and borders had been more or less obliterated by dense scar tissue and this was left undisturbed. Intranasal irrigation of the sinuses was kept up for some time by the patient. His subjective symptoms gradually wore away and the exudate was only enough to form a few crusts. On June 24, 1912, he had no complaints and there was no nasal discharge. Over the right sinus there was no depression and it was only moderate over the left sinus and not enough to obstruct. This third operation was made necessary because bone had been removed at the point where support is needed to prevent sinking in of the soft parts which would thereby cause blocking of the sinus and would keep up or tend to result in fistulas.

CASE 2.—A man, aged 31, had suffered from double frontal sinusitis for about five years. About four years ago both sinuses had been operated on by the combined intranasal and external route. Six weeks ago a double, modified Ogston-Luc operation was performed. Neither wound healed and the usual symptoms persisted. When seen by me there were extensive scars and a moderate depression over each sinus and a profusely discharging fistula existed on either side. The anterior ends of both middle turbinates had been removed and there was pus in the middle meatus. It was evident that all the signs and symptoms were due to the fact that there was inadequate sinus drainage.

Both frontal sinus scars were reopened and the sinuses found full of pus and granulations. The openings into the nose were nearly occluded by granulations. The interfrontal septum was removed and also all the dense bone below it, as described in the technic for complete removal of the floor of the sinuses. The external wounds were closed. His convalescence was rapid. The wounds remained closed and the original edema as well as the headache and frontal tenderness gradually subsided. He left the hospital in ten days and has not been heard from since. The nasal discharge had very materially lessened.

CASE 3.—A woman, aged 54, states that there has been a left nasal discharge for several years and some headache and local tenderness. On March 30, 1914, she was suffering from acute frontal sinusitis. There was edema of the left frontal region and upper eyelid and there was hemorrhagic exudate in the left middle meatus. She was suffering severe pain. The anterior end of the middle turbinate was removed. Relief of symptoms followed and the swelling disappeared, but some discharge continued.

May 26: Edema has recurred at times attended with some pain and exacerbation of discharge. A curved incision was made in the left eyebrow and the supra-orbital nerve divided, for at this time we had not limited ourselves to the short incision, so as to avoid this nerve. The periosteum and superimposed soft tissues showed evidence of chronic inflammation and the frontal bone was soft. The sinus was full of pus and granulations. The interfrontal septum was already perforated and the probe passed deeply into the right sinus; this was found to be full of pus and granulations, and its ostium must have been closed because no discharge had reached the middle meatus. Through this single opening into the left sinus the floor of both sinuses was removed without much difficulty. This is the first case in which an attempt was made to operate on both sinuses from one side. This was done in all subsequent cases and no material difficulty was encountered. The wound remained closed and the patient's convalescence was rapid. On July 18 the nose was free from pus; there was no complaint except of paresthesia along the supra-orbital distribution.

Fig. 5.—Outer wall of nasal fossa seen in Figure 4 after removal of dense bone forming floor of right sinus leaving a thin anterior wall; *u*, unciform process broken off in vicinity of ethmoid cells opposite the lacrimal bone.

Jan. 5, 1915: There are no frontal symptoms, no exudate; frontal numbness is decreasing.

March 22: There are no complaints; the nose is perfectly clean; a small adhesion exists between the septum and the lateral wall of the nose high up but not obstructing the sinus outlet.

CASE 4.—A man, aged 32, has had attacks of right frontal sinusitis for three years accompanied by frontal edema and

a perforation (fistula); has been subject to epileptic attacks for some years. On Aug. 18, 1913, an Ogston-Luc operation had been performed and part of the middle turbinate removed and anterior ethmoid cells broken down. This failed to relieve the symptoms and the external fistula persisted as before.

March 21, 1914: An incision was made in the old scar, passing through the fistulous opening; the sinus was large and filled with granulations; the floor of both sinuses was removed. There was a slight catarrhal inflammation of the left sinus; the wound was closed.

March 22: A cocoon dressing was made.

March 26: The wound having healed, dressing was omitted; condition excellent.

March 28: An attack of facial erysipelas occurred accompanied by an attack of epilepsy. This caused us apprehension because his epileptic history was then unknown to us. His convalescence was uninterrupted and the wound remained closed without recurrence of nasal discharge.

April 20, 1915: There has been no recurrence of the frontal symptoms or of the epilepsy.

Case 5.—A man, aged 19, had a right nasal discharge for several years with much odor; the patient was neurasthenic. Transillumination showed the right antrum very dark. This was opened and cleaned on May 25, 1914, under the lower turbinate. The anterior end of the middle turbinate was removed and the ethmoid cells curetted. Right frontal sinusitis was suspected.

June 20: The right frontal sinus was opened and found full of pus and granulations. There was a small interfrontal perforation and the left sinus was found to be affected equally and was draining into the right side. The floor of both sinuses was removed, the ethmoid cells broken up, and nasal polypoid tissue removed; the wound was closed. There was a very moderate edema of the right upper eyelid.

July 31: The nose is nearly clean.

September 11: No supra-orbital numbness is present; there are no complaints.

Jan. 30, 1915: No nasal discharge is present; the scar is barely perceptible; complete physical and mental relief has been given.

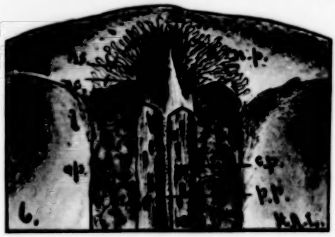


Fig. 6.—Looking up at the lower surface of the frontal bone disarticulated at the level of the naso-frontal suture; upper portion of ethmoid bone in situ; *n* and *np*, broad serrated area for articulation with thickened ends of nasal bones and nasal processes of superior maxillae; *ns*, nasal spine; *nc*, nasal crest; *F*, hiatus frontalis; *l*, articulation for lachrymal bone; *op*, os planum; *pp*, perpendicular plate; *cp*, cribriform plate external to which is a line representing the upward prolongation of the middle turbinate, still more externally are the ethmoid cells. *e*; *O*, roof of orbit. Dotted line shows area forming floor of both sinuses to be removed.

Fig. 7.—Front wall of both sinuses and of upper nasal fossae removed showing dense mass of bone behind the base of nose forming median portion of floor of sinuses: *n*, end of nasal bone; *np*, nasal process; *s*, septum of frontal sinus and of nose. Arrows pass through ostia to nose.

Case 6.—A man, aged 29, presented himself on May 1, 1914, suffering from an attack of acute right frontal sinusitis arising two weeks after an acute rhinitis. He was not relieved by local applications and on May 5 complete relief of pain followed the removal of the anterior end of the right middle turbinate. On June 4, in the left sinus, acute symptoms began, which were only partially relieved by applications and the removal of the left middle turbinate. The ethmoid cells were somewhat involved. Roentgenograms showed very large sinuses with deep orbital prolongations. On July 15 an opening was made in the left sinus through which both sinuses were explored and found filled with pus and polyps. The sinuses were cleared of polyps and the floor was removed, leaving a very large opening into the nose. The wound was closed and the patient left the hospital in three days.

August 3: The patient feels well; there is no discharge.

August 18: Some pain existed over the left sinus and with the removal of a large crust some pus followed; the patient feels well; there is some nasal discharge.

September 28: The left antrum is dark on transillumination. The Roentgen ray shows pus cavities at the tips of the two upper left molar teeth. The openings into the frontal sinuses are large and free. The teeth were extracted and the root cavities found to communicate with the left antrum.

November 22: The nasal condition is much improved; there is still some discharge but no frontal sinus complaints.

December 26: Under ether the intranasal examination of sinuses showed that the openings were still very large and that the sinuses were free of pus and polyps. The left anteronasal wall was removed.

January 1: The patient still has considerable bilateral nasal discharge.

March 1: There is much less nasal discharge. He has had a severe attack of acute follicular tonsillitis. This case has been obstinate.

Case 7.—A man, aged 27, has had left frontal sinusitis for four years, accompanied by frontal tenderness, headache, and left nasal discharge. Two years ago both middle turbinates were removed without much relief. The left sinus was dark on transillumination, which was confirmed by the Roentgen ray.

July 25, 1914: A short incision was made over the left sinus internal to the supra-orbital notch, a procedure followed out in all subsequent cases. The sinus was full of thick pus and polyps. No apparent inflammation existed in the right sinus. The floor was removed and the wound closed. A cocoon dressing was made on the second day; there was no supra-orbital numbness; immediate relief of all symptoms was given; the convalescence was uninterrupted.

October 9: The patient has gained 15 pounds over his usual weight and is perfectly relieved.

Case 8.—A man in whom the Wassermann test was positive, and who had left frontal sinusitis and ethmoiditis.

On Dec. 10, 1914, the left sinus was opened, found full of pus and granulations and curetted. The floor of both

sinuses was removed. The wound was closed, after the ethmoid cells on both sides had been curetted, and healed by first intention. The left antronasal wall was found gone and small sequestra of necrotic bone were observed, probably the result of syphilis. The wound remained closed. For a time there was considerable bilateral nasal discharge which gradually disappeared, leaving a little crusting.

Jan. 27, 1915: No subjective symptoms remained; there was still a little crusting in the nose, but no frontal sinus symptoms. Specific treatment was continued.

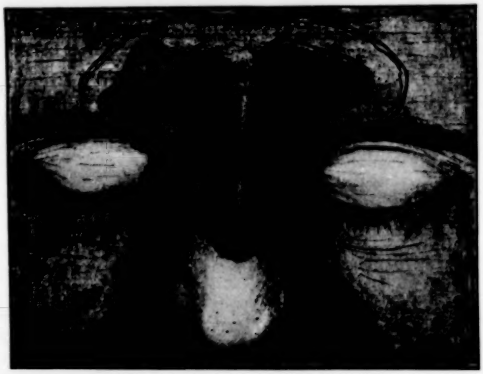


Fig. 8.—Same region as shown in Figure 7 after removal with burr drills and rasps, looking into the nasal fossae; *pp*, perpendicular plate deeply notched. A probe entering either nares would pass readily into either sinus.

CASE 9.—A woman, in whom a fistula had persisted ever since an operation on the left frontal sinus about six months before. The Roentgen ray showed both sinuses involved. Examination showed a fistula at either end of the incision on the left and the right upper eyelid was much swollen and presented a discharging sinus from the soft tissues. There was much nasal discharge.

Dec. 11, 1914: The left sinus was opened through the left scar and was found full of pus and granulations and the right side was similarly involved. The floor was removed and the sinuses curetted. The incision was closed and remained so; the frontal edema gradually subsided.

December 28: No pain or headache exists; there is a very slight nasal discharge.

January 6: Both antrums were dark on transillumination and they were opened into the nose.

March 26, 1915: There is still some pus in the antrums; the frontal sinuses are free.

This case again illustrates how all fistulas close at once if adequate and permanent nasal drainage is established, and also that frontal pain and tenderness disappear spontaneously.

CASE 10.—A man, aged 30, had acute right frontal sinusitis for one week, with pain and edema over the sinus and pus in the middle meatus. The right middle turbinate was excised on Nov. 28, 1913, which was followed by relief of all symptoms. On December 12 there was very little discharge and no pain. March 29, 1914, both tonsils were enucleated following an attack of acute tonsillitis.

Jan. 20, 1915: Right frontal pain has existed for three days; there has been a discharge from the right nostril for two months. The Roentgen ray and transillumination show shading in the right sinus and antrum. Some pus was washed from the antrum.

Fig. 9.—Lateral roentgenogram showing dense bone (*2*) at the base of a large frontal sinus, and the relative distance from the base of the nose to the crista galli (*cg*); *3*, cribriform plate; *O*, orbit; *S*, sella turcica.

January 30: The right sinus was operated on and was found to be empty; pus and granulations were found in a large cell occupying the front half of the crista galli which discharged into the nose. The left sinus was normal. The floor of both sinuses was removed. The wound healed at once; there was no supra-orbital numbness.

February 13: The antrum wash is nearly clear; there is no pus in either side; a slight crusting appears in the right middle meatus. March 8, following an acute rhinitis, considerable pus was washed from the right antrum; no sinus symptoms appeared.

March 18: The nose is clear.

CASE 11.—A man, aged 30, has had headaches and tenderness over the right frontal sinus for many years. A few weeks ago he was struck on the right eyebrow, receiving a wound. There has been swelling ever since. In December, 1914, he had been operated on and both sinuses opened externally and into the nose. At that time an opening was found in the anterior wall of each sinus. A horizontal incision was made across the center of the forehead. A fistula persisted in the center of the forehead leading to the left sinus and there was a second opening in the right eyebrow connecting with the right sinus. Two weeks later the middle turbinates were removed and the ethmoid cells broken down but without relief.

On Feb. 7, 1915, we found these fistulas discharging much pus and the frontal region much swollen. There was also much nasal discharge. A short incision was made in the right eyebrow and the right sinus was opened and through this opening both sinuses were exposed and curetted and the floor removed. This incision was closed and the sinuses in the old incision and eyelid were curetted. There was no further discharge from the fistula in the forehead and that in the eyebrow closed in five days. The incision healed at once. On February 15 the frontal swelling was about gone. On February 20 an abscess which developed in the septum was incised and healed rapidly. February 22 some carious bone was removed from the ethmoid cells. February 25 both antrums were opened and drained. No frontal sinus symptoms were present and all wounds had healed.

This case was unusually severe and complicated and was a good test of this method of dealing with obstinate fistulas and extensive suppuration.

Case 12.—A man, aged 45, has had symptoms of right frontal sinusitis for twenty-five years with attacks of pain lasting two or more weeks. The anterior portion of the right middle turbinate had been removed. During and following the attacks of pain, he complained of a discharge of pus from the right nostril.

On Feb. 5, 1915, the right sinus was operated on through a 1-inch incision in the brow, internal to the supra-orbital foramen. No supra-orbital anesthesia followed but there was a small numb area, from severing the supratrochlear fibers, which was of short duration. Through a small opening in the bone the sinus was explored and the mucous membrane found edematous and some pus was present. The interfrontal septum and the floor of the sinuses were then removed and the incision closed in the customary way.

March 7: There is no lid edema; a cocoon dressing was made.

March 20: No signs of any trouble exist; the patient feels perfectly well; there are some synechiae on right side which do not obstruct, but there is no discharge or crusts.

Case 13.—A woman, aged 25, has had double frontal tenderness and severe headache for eight weeks. Four weeks ago her left middle turbinate was excised, the ethmoids were punctured and the left frontal sinus opening enlarged internally by means of rasps. This was followed by slight relief. Two weeks ago the same operator repeated this procedure on the right side and punctured the right antrum. The operation was followed by ecchymosis and emphysema under the right eye and really gave no relief. Nine days ago an acute right otitis media developed.

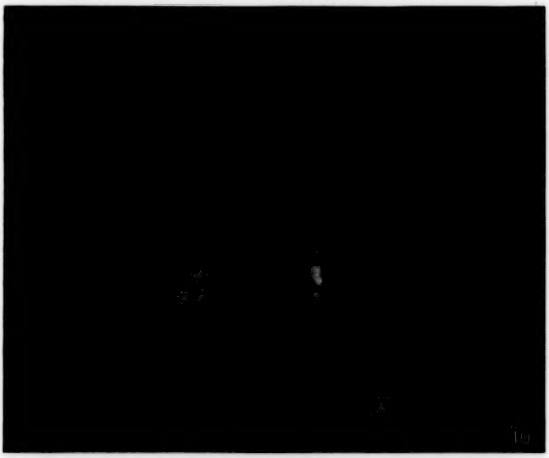


Fig. 10.—Anteroposterior roentgenogram showing the height and lateral extent of the sinuses: *O*, orbits between the inner boundaries of which is the nasal floor of the sinuses, all of which is to be removed; *cg*, crista galli; *C*, level of cribriform plate; *s*, nasal septum; *mt*, middle turbinate; *E*, ethmoid cells; *A*, antrum.

March 8, 1915, we operated in the usual manner on her frontal sinuses through a short incision in the left eyebrow. In the left sinus was pus under much tension and granulations. There was already a large perforation in the interfrontal septum. The right sinus also was filled with granulations. The sinuses were curetted, the floor removed, and the wound closed. Local inflammation gradually subsided and the wound remained closed; some supratrochlear numbness ensued. March 12, she had a small abscess of the septum which resolved quickly.

March 13: Most external signs are gone.

March 19: The patient was operated on for acute mastoiditis which had complicated her otitis; the mastoid was found full of pus, granulations and carious bone.

March 26: The frontal region is well.

March 29: Pus was washed from the right antrum.

April 2: A radical operation was done on the right antrum.

April 17: There is still some discharge from the right antrum; all the other lesions are well.

Case 14.—A woman, aged 30, for one month has had headaches which for eight days have been severe over the right sinus. No pus appears in the nose; no relief follows intranasal applications. She was advised by those in charge to have an exploration of the sinus; this was done and was followed by immediate relief. The sinus was found much congested and a small drain of rubber tissue was left in for three days. Meanwhile, a paracentesis was done in the right ear. March 25 there were edema and acute inflammation around the operation wound. This was incised and pus escaped, coming from the sinus.

On March 26 she came under the care of Dr. O. A. Lothrop and the usual sinus operation was performed. The sinus was found full of pus and granulations. The left sinus also was similarly involved. The wound was closed.

March 27: A cocoon dressing was applied; the wound broke down at one point and discharged pus for five days. April 29 she returned from a vacation. The nose was clean, the ear also well. There was some supra-orbital numbness because the nerve was cut at the first operation. The external scar was slightly depressed.

Case 15.—A man, aged 38, had left frontal sinusitis for three years, characterized by tenderness, discharge and headache. There were some polyps and a left ethmoiditis. The Roentgen ray shows the presence of large sinuses, the left shaded. The left middle turbinate had been removed three years ago.

On April 10, 1915, a 1-inch incision was made in the left brow, internal to the supra-orbital foramen. The sinus was full of pus and polyps; the cavity was very large. The mucous membrane of the right sinus was edematous. The nasal floor was removed and the incision closed. The ethmoid cells of the left side were curetted out and much polyp material removed. Only supratrochlear numbness resulted. The wound remained closed; there was no edema, but a considerable intranasal reaction. The patient was in the hospital five days.

April 17: No pain or headache is felt; pus shows in the nares.

May 10: Some polyps with pus are still in the left nose. No symptoms are referable to the frontal sinus. The polyps are to be removed.

Case 16.—A woman, aged 45, for fifteen years has had chronic suppuration in both antrums and the right frontal sinus, for which she has had intranasal treatment during much of this period. She has had much pain and tenderness over all these regions and much foul smelling pus. The cervical lymph nodes are enlarged. The Roentgen ray shows both antrums dark, also the absence of any appreciable frontal sinus trouble on the left. July 29, 1914, a radical operation was performed on the left antrum which was first approached through the canine fossa and found full of pus and polyps. The naso-antral wall had been removed pre-

viously and was now found to be fibrous. At this time the right antrum was fairly clear. On August 10 a similar operation was done on the right antrum because of acute symptoms and the same condition was found. Feb. 12, 1915: The antrums have remained in better condition than for years although somewhat troublesome, and the nasal openings tend to close with fibrous tissue. At this time the patient developed a left acute otitis media and on February 25 she was operated on for mastoiditis. The mastoid was found nearly sclerosed with vascular and soft bone. She made a good recovery.

April 13: The patient has complained of much pain in the right frontal sinus. This sinus was opened through a short incision in the eyebrow and found full of pus and granulations. The opening was enlarged into the nose and the left sinus approached carefully through this opening, having in mind the fact that the Roentgen ray showed no sinus on this side. Exploration showed only diploë and no sinus cavity on the left. Toward the end of the operation the patient suddenly stopped breathing but resumed in a moment and appeared to be suffering from some respiratory trouble. There was some cyanosis and increased rate of pulse and respiration. That afternoon respiration, pulse and temperature were elevated. On auscultation there was absence of respiration in the lower and middle lobes of the right lung. Next morning very little air entered the right lung. She was seen in consultation by Dr. J. B. Hawes, and it was agreed that she was suffering from infarct due to pulmonary embolus. She died that noon. No necropsy was allowed.

We have here a long history of suppuration in the nasal sinuses combined with chronic mastoiditis. All of these conditions were being relieved gradually. She probably had a thrombus in one of the veins of the neck and this was the source of the embolus which evidently became detached during the operation. This was our only fatality and was a coincidence rather than the result of any particular method of operation.

CASE 17.—A man, aged 39, had suffered four years from bilateral nasal polypi obstructing both passages. On March 27, 1915, the right antrum and right frontal sinus were dark on transillumination. The Roentgen ray showed the sinus to be very large and both apparently affected.

On April 20, the usual incision was made over the right sinus, sparing the supra-orbital nerve. Both sinuses were very large and filled with polypi which were curetted and the customary large opening was made into the nose. Masses of polypi were removed from the ethmoid regions. This caused considerable bleeding. Ether recovery was slow. The patient was very comfortable on the next day. The wound remained closed and he made a good recovery.

May 6: The patient is entirely relieved of frontal symptoms; there is much less discharge, but some polyps are still to be removed from the ethmoid regions.

CASE 18.—A woman, aged 17, had nightly headache and left nasal discharge following an acute rhinitis one month ago. Edema over sinus has existed for one week.

April 27, 1915: A short incision was made in the left eyebrow; pus was found under the periosteum, but no gross perforation was observed. The sinus was small but full of pus. The right sinus was entered with some difficulty on account of the thickness of bone, and was found to be large and much congested. The usual operation was completed and the wound remained closed.

May 1: No increase of edema has occurred.

May 4: The wound is solid; some discharge is present from both sides, but no pain, tenderness or headache.

May 21: No discharge is noted; there is slight crusting.

TECHNIC OF OPERATION

The technic originally presented has been changed only in certain details and, in brief, the steps are the following:

Preliminary intranasal treatment, including removal of anterior end of middle turbinate and breaking up some of the neighboring ethmoid cells, is advisable because this may effect a cure.

Roentgenologic examination should be made, both as an aid to diagnosis and, particularly, to determine the anatomic characteristics of the sinus. A lateral and an anteroposterior view should be taken. The patient should be etherized and placed in a position half way between sitting and supine. Just before etherization a pledget of cotton wet with an epinephrin (1:2,000) and cocain (4 per cent.) solution should be placed in each anterior ethmoid region. This will lessen the amount of hemorrhage and facilitate working in this locality. These pledglets are removed when the patient is etherized and the nasal cavities are to be tamponed from the posterior nares or with small strips of gauze introduced anteriorly, preferably the former, thus avoiding the annoyance of blood reaching the pharynx. The ether is supplied through a curved catheter or tube entering the mouth.

The eyebrow should not be shaved. A single, curved, 1-inch incision is made in the inner portion of the eyebrow, limited externally by the supra-orbital notch; saving this nerve avoids the unnecessary complication of numbness and then paresthesia along its distribution. The sensory disturbance caused by dividing the fibers of the supratrochlear nerve is trivial. The bone is bared of periosteum over the area indicated in Figure 1, the presence of a sinus having been portrayed by the Roentgen ray. The sinus is entered with the chisel and enlarged by the rongeur forceps so as to make an oval opening about ¾ inch long. The region is then explored with the probe, and pus, granulations and polypi are gently removed, if present, after which this curved probe is to be passed through the ostium into the nose and left in situ as a guide. Small, curved curets are then passed down from above just in front of the probe and the walls of the cells on the floor of the sinus are broken up. On account of the proximity of the anterior end of the cribriform plate to the ostium frontale, the posterior angle of the sinus should be constantly avoided. The operation is to be completed by means of burr drills devised by Tilley and Ballinger for antrum operations and by rasps fashioned for this operation by Dr. O. A. Lothrop. The rasps should be used first and may be passed from above and below through the enlarged ostium, cutting forward and laterally. The burrs and rasps are to be used alternately at the discretion of the operator, gradually reaming out all the dense bone of the floor of the sinus toward the base of the nose. As will be seen from the figures, this bone includes the nasal crest and spine of the frontal bone, the thick ends of the nasal bones, and the nasal process of the superior maxillae. The interfrontal septum should be perforated and then burred away so that the other sinus may be explored. Then, by means of the burr, the perpendicular plate of the ethmoid should be removed, as shown in Figures 3 and 8. Through this same opening in the anterior sinus wall and also through both sides of the nose, both of which are now accessible, the dense bone under the opposite sinus is burred or rasped away until, finally, there remains only a thin shell of bone around the whole circumference of the floor of the sinus in front, as shown in Figures 3, 5 and 8. In all instances, even when only one sinus is affected, experience has shown the wisdom of using the combined floor of both sides. Finally, with the large burr, determine that sufficient bone has

been removed from the perpendicular plate and that the cells opposite the lacrimal bone, the agger nasi cells, and other neighboring ethmoid cells have been broken up. If the antrum has served as a reservoir, it is wise to make a large opening under the inferior turbinate. The skin incision is to be closed without drain and all tampons removed. We have not found it necessary to pack the nose for hemorrhage. Blood pressure may be lessened by propping the patient up in bed. A compress bandage should be applied and, after a day or two a cocoon dressing. There should be but little edema of the superior lid. The subsequent treatment consists in keeping the nose clean. The sinus cavities are easily accessible to treatment if occasion arises.

101 Beacon Street.

THE POSTOPERATIVE ANTISEPTIC TREATMENT OF THE TONSILLAR FOSSAE

GEORGE PAULL MARQUIS, A.M., M.D.
CHICAGO

It is not the purpose of this paper to discuss the question of tonsillectomy versus tonsillotomy, or the respective merits of the dissection method as compared with other forms of technic, but to present a simple method of procedure which has tended to reduce the unpleasant after-effects following the operation, by whatever method it has been performed.

The operator is frequently confronted with a number of conditions which are decidedly unpleasant, and it was to relieve these that I began to look for some modification either of my method of operating or in the after-treatment. As the latter seemed the easier on which to experiment, I chose it, and continued to perform the operation as I have done for the past few years.

There had frequently been a good deal of reaction along the pillars, in the fauces, and occasional edema of the uvula. With these conditions was associated great soreness in the throat, difficulty in swallowing, and impaired speech. There was a heavy fibrous exudate in the tonsillar fossae, which persisted for from four to seven days. When this was removed with peroxid and then a 5 per cent. solution of silver applied, the pain in swallowing was much less, and it struck me that if fibrous crust could be prevented from forming, we could avoid some of these difficulties. This brought the question, What was the cause of the reaction — the edema and the exudate?

I think we must call it an infection. True, our instruments are sterilized, and we work under antiseptic precautions; but we know that at no time is the mouth free from bacteria. A prominent bacteriologist states that there are ten varieties of actively pathogenic and seven of potentially pathogenic bacteria found in the mouth.

As soon as the tonsil is removed, we have an open surface for their invasion and one where, through trauma, the most favorable conditions for their development are presented. If this surface is treated with a strong germicide, the infection is greatly lessened or in some cases altogether prevented. Acting on this theory, I began applying a 50 per cent. solution of tincture of iodin to the fossae immediately after the removal of the tonsil. The result fully justified this action, for none of the symptoms mentioned above were present. I did notice, however, that the membranes appeared to have been treated with an acid, so in the next case the solution was reduced to 25 per cent., and this I have continued to use.

The discomfiture has been reduced to a minimum, the great majority of the patients eating without complaint. In only one case has any edema of the uvula occurred, and I am inclined to ascribe this to an infection which I did not control, possibly through injury to the venous system in that locality.

It may be argued that this exudate is the normal pouring out of lymph as we see after an injury on the surface of the body. Probably in a measure this is true, but why should it be reduced to a minimum and in many cases fail altogether after the use of iodin?

There have been some cases in which, on the next day, there was some exudate and some soreness; but cleaning this out and applying the iodin again has usually given the desired relief.

I believe that here, as elsewhere, it is easier to prevent an infection than it is to cure one, and for that reason before the patient leaves the table, after retracting the pillars so as to give an unobstructed view to every part of the fossa, the iodin is carefully applied to the entire surface.

I have treated over 100 cases in this manner, and in only one case has it seemed to have no effect, and the same soreness, etc., occurred which I used to find before employing this method.

In order to convince myself that the tonsillar fossa was less septic after the iodin treatment, a series of cases was given this treatment, and bacteriologic examinations made before and after operation. Four cases were selected on each operating day. Cultures were made of these throats. At the operation two would receive this treatment and two would not. The next day cultures were again made of the four throats. The universal finding was that there was less bacterial growth in the cases in which the iodin and alcohol had been used.

Of course, it is necessary that all hemorrhage be controlled before applying the iodin, or it will simply be washed away and no effect produced by it. It is my custom to have ready a tampon about the size of the tonsil, and saturated with alcohol. Immediately on removal of the tonsil, this replaces it in the fossa and prevents the hemorrhage. When it does not, the pillar is retracted and the bleeding point grasped with a hemostat. The fossa is then painted with the iodin solution, which is also carried onto the pillars and uvula. As a rule, there is almost no soreness the next day, but when any is present the same solution is applied.

Of course, by far the greater number of the patients have been children, but I have had a fair proportion of adults, and am therefore in a position to state that the result is at least as good in the latter as in the cases of children.

30 North Michigan Avenue.

Morbidity Registration.—It will be an invaluable contribution to therapeutics, as well as to hygiene, for it will enable the therapeutists to determine the duration and the fatality of all forms of disease under the several existing systems of treatment in the various sanitary and social conditions of the people. Illusion will be dispelled, quackery, as completely as astrology, suppressed, a science of therapeutics created, suffering diminished, life sheltered from many dangers.—*Farr.*

CALOMEL POISONING

A CASE OF SOME VALUE TO OUR FELLOW PRACTITIONERS

J. H. BUFFORD, M.D.
Physician, Dermatological Department, Boston Dispensary
AND
C. G. LANE, M.D.
Assistant to Physicians, Dermatological Department, Boston Dispensary
BOSTON

The following report concerns a syphilitic patient who had a primary lesion of the lip two or three years ago and had been under treatment intermittently for lesions about the mouth and throat.

Miss X entered the Dermatological Department of the Boston Dispensary on December 30, complaining of sore throat, fever, malaise, sore face, inability to swallow, and huskiness of voice.

Four days previously, she was taken ill suddenly with the above symptoms, and two days later she consulted a physician who made a diagnosis of acute tonsillitis. He prescribed a cathartic, a gargle, and some other medicine to take internally. She felt a little better on the 29th but on the 30th her throat seemed worse and she returned to the dispensary. Examination showed a swollen face and neck, swollen lips, gums, tongue, and mucous membranes of practically the whole mouth and pharynx. Her tonsils were somewhat swollen, were red, with an occasional spot resembling a mucous patch. The gums were quite red, swollen, with a blotchy white appearance in places similar to the spots on the tonsils. The cheeks and folds between the cheeks and gums were also slightly red, and white patches were also observed in these places. There was considerable salivation but no mercurial odor, and it developed on questioning that a certain amount of pain was caused by forceful closure of the teeth. There was some tenderness beneath the jaw and palpation disclosed some enlargement of the submaxillary and submental glands. The case suggested hydrargyrism although no history of mercurial medication could be obtained at first.

She had not been under antisyphilitic treatment for some little time and the question arose as to whether her condition was a recurrence of the syphilis. The white patches with the glands and, especially, the fact that she had apparently not been taking mercury for some little time supported this view. She was questioned in regard to medicine taken during the past few weeks. Questioning to "back up" our diagnosis was futile for twenty minutes. By persevering, however, we finally elicited the fact that the week previous a friend had been using some "Calomel, 1 grain," pills for a laxative, and she had purchased at a drug store a hundred of these pills and had taken them as follows: On the 22d, she had taken four; on the 23d, 24th, and 25th, she had taken three four times a day; and on the 26th and 27th, she had taken enough others to make the total number taken fifty-six. On the 26th, the patient had noticed that her throat and mouth were swollen and that it hurt her to swallow. The condition had continued, becoming steadily worse, so that she had consulted the physician.

There had been no special laxative effect from the pills for it had been necessary for her to take some other laxative previous to consulting her physician. She had not even noticed any discomfort in her stomach or bowels, and the only complaint was of her throat and mouth.

The diagnosis in this case, until the full history was obtained, rested between a tonsillitis, a recurrence of the syphilis, and a stomatitis, probably of mercurial nature.

The case shows the importance of close and persistent questioning to bring out facts and also the importance of believing what one sees rather than what one hears in a dermatologic clinic. The history seemed very positive and was so very strong against mercurial medication, and was so clear as to repeated attacks of very unusual syphilitic manifestations of the whole mouth, tongue, throat, etc., that we were puzzled for a time. She made rapid recovery.

A FURTHER STUDY OF THE CHEMICAL COMPOSITION OF URINARY CALCULI *

JACOB ROSENBLOOM, M.D., PH.D.
PITTSBURGH

Together with Dr. Max Kahn,[1] I have reported the analyses of twenty-five urinary calculi. The results showed, contrary to the usual statement, that the large majority of renal stones are composed of calcium oxalate and not of uric acid or urates. I now report the results obtained in the chemical analysis of a new series of twenty-six renal calculi of which, as may be noted from the tabulated data, only two were uric acid stones, while the balance, or twenty-four, were composed principally of calcium salts.

PERCENTAGE COMPOSITION OF TWENTY-FIVE RENAL CALCULI

No.	Weight, Gm.	Moisture, Per Cent.	Calcium Oxalate, Per Cent.	Uric Acid, Per Cent.	Phosphorus Pentoxid, Per Cent.
1	5.8026	1.37	38.30	4.20	50.13
2	9.1904	4.30	40.60	6.72	38.16
3	0.5318	5.50	63.81	1.72	10.12
4	2.7325	2.80	7.72	90.10	.....
5	36.5630	8.70	33.90	4.80	53.46
6	1.5012	5.10	3.52	91.30	.....
7	1.3076	0.40	70.22	9.32	18.24
8	2.4723	1.05	91.30	6.71	3.82
9	3.1005	1.27	72.63	17.03	5.70
10	6.2246	0.60	98.00	1.12	7.30
11	5.7210	1.34	65.72	8.21	8.61
12	0.9205	0.78	90.76	7.92	6.82
13	0.4678	0.09	92.47	2.07	5.12
14	1.6240	0.63	90.82	3.17	4.18
15	1.9372	1.30	48.36	9.18	9.80
16	3.6042	3.30	47.22	6.72	7.56
17	1.2351	1.80	93.28	1.71	4.32
18	11.2678	1.65	94.27	0.62	3.74
19	8.5732	3.18	58.22	0.00	0.42
20	4.6002	2.73	94.17	1.82	6.10
21	4.7801	0.90	90.32	1.37	5.80
22	0.9763	0.60	95.12	0.24	6.72
23	1.2478	1.22	83.27	2.32	5.18
24	0.9608	0.78	39.93	7.62	3.42
25	3.2005	1.42	86.47	2.24	5.35
26	8.7622	5.81	82.17	9.35	3.72

I was unable to demonstrate any trace of lecithin or cholesterol in the ether-alcohol extract of any of these calculi.

We have pointed out previously the necessity of changing our therapeutic ends with regard to the treat-

* From the Biochemical Laboratory of the Western Pennsylvania Hospital.

1. Kahn, Max, and Rosenbloom, Jacob: A Report of Some New Chemical Analyses of Urinary Calculi, THE JOURNAL A. M. A., Dec. 31, 1912, p. 2252. Kahn, Max: A Study of the Chemistry of Renal Calculi, Arch. Int. Med., January, 1913, p. 92; Ztschr. f. exper. Path. u. Therap., 1914, xvii.

ment of renal calculi.[2] We again draw attention to the fact that the therapeutic measures for the treatment of insoluble calcium salt calculi are completely different from those employed for uric acid. The usual antacid treatment is just the opposite of what is indicated, on account of the fact that uric acid and its acid salts are soluble in alkaline mediums and insoluble in acid, the opposite is true for calcium oxalate and calcium phosphate, which are deposited in alkaline mediums and dissolved by acids. For these reasons all calculi obtained should be chemically analyzed and on the basis of their chemical composition more rational therapy can be instituted.

5737 Forbes Street.

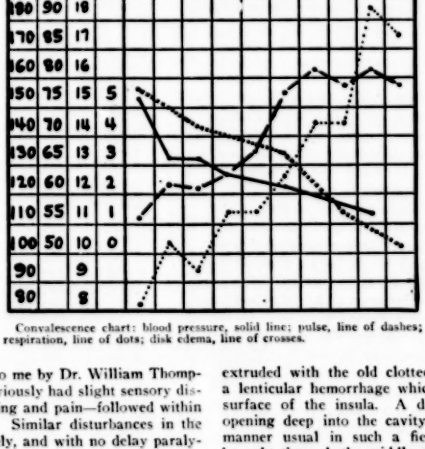
SURGICAL MEASURES IN APOPLEXY

REPORT OF A CASE

CHARLES M. REMSEN, M.D.

ATLANTA, GA.

It may appear radical to advocate operative procedures on spontaneous intracerebral hemorrhage; nevertheless, a correlation of the pathology with the symptoms suggests, in selected cases, two rather positive operative indications: first, the relief of the general intracranial pressure due to the presence of the clot, and, second, the removal of the clot, if this be possible, in order to relieve the more delicate portions of the brain, should the clot remain, from secondary changes which may become permanent because of the surrounding reaction. The following case may be of interest in illustrating features which indicate operative procedures, and the results obtained are somewhat instructive when considered from an operative and pathologic basis:



Convalescence chart: blood pressure, solid line; pulse, line of dashes; respiration, line of dots; disk edema, line of crosses.

History.—A patient referred to me by Dr. William Thompson of Dublin, Ga., six days previously had slight sensory disturbances of the left arm—tingling and pain—followed within an hour by complete paralysis. Similar disturbances in the foot were felt almost immediately, and with no delay paralysis of the whole leg ensued. The patient soon became unconscious, and during the next five days his condition became gradually worse. He was at this time in a comatose state, which was punctuated occasionally by attacks of great irritability.

Examination.—The patient was in a semistuporous condition, and did not answer questions. Occasionally some incoherent remarks were made. There was quite marked restlessness and flinging about of the right arm and leg at indefinite intervals. The left arm and leg were not moved. Occasionally a slight response could be obtained, and it was possible to demonstrate a slight grasp in the left hand. Throughout the whole left side of the body there were definite disturbances of sensation, though occasionally the patient perceives marked sensory impulses very slightly. It was extremely difficult to elicit reflexes, and nothing of note could be ascertained from these. There was a definite weakness of the left side of the face, the left arm and the left leg. Both eyes were closed, and it seemed impossible for the patient to open them. Pulse, 60; blood pressure, 146; respirations, 8; Cheyne-Stokes. On forcible opening of the eyes there seemed to be a momentary nystagmus, but this passed off rapidly. The pupils were practically the normal size, but there was practically no reaction to a strong light flashed into the eye.

Examination of the disks showed on the right side a swelling of 2 D. on the temporal side of the disk, and 5 D. on the nasal side. The veins were somewhat enlarged and tortuous. In the left side a similar condition was seen, the swelling being more marked on the nasal side and less so on the temporal. In general, there was an edema of the right disk which was quite marked, and of the left disk which was very slightly less marked.

Considering the history and the examination, which showed increased intracranial pressure, it seemed advisable to perform an exploratory craniotomy with the hope of removing the clot or, in the case of finding cerebral edema only, of performing a subtemporal decompression.

Operation.—The usual muscle-splitting approach was employed. A generous decompressive opening was fashioned, and the dura was opened so as to expose the operculum and that portion of the cortex overlying the basal ganglia. The brain itself was edematous and evidently under pressure. There was a distinct tendency of this to extrude through the opening. The fissura cerebri lateralis was demonstrated, and anteriorly there were no visible suggestions of underlying hemorrhage. Posteriorly, on careful separation of brain and dura, there was encountered a collection of clotted and semiclotted blood forming a cavity about the size of a golf ball or larger, which had as its external opening the lateral cerebral fissure between the gyrus centralis posterior and gyrus temporalis superior. Small portions of brain tissue were extruded with the old clotted blood. This, then, suggested a lenticular hemorrhage which had worked out through the surface of the insula. A drain was inserted through the opening deep into the cavity and closure was made in the manner usual in such a field. The protective drain was brought through the middle of the incision.

Owing to the fact that this patient had been subjected to six days of pressure, I was not optimistic in the prognosis of the relief from permanent changes of the fibers of the internal capsule, even had the hemorrhage itself been located in the lenticular nucleus principally. The convalescence, as may be seen by the accompanying chart, was a complete success from the standpoint of the relief from the general increased pressure. The mentality cleared rapidly, and the facial paralysis on the eighth day was fast disappearing. The paralysis of the extremities cleared more slowly, and it is difficult to say whether or not the procedures had marked influence on this feature. Nevertheless, it is only suggestive that procedures such as this should be undertaken sooner, not only with the hope of avoiding fatal issue which was

2. Schildecker: Am. Jour. Obst., 1914, lxx, 979. This article gives detailed directions for the treatment of the various urinary calculi.

most certainly the case with this patient, but also with the desire of removing secondary permanent disabilities which may occur when the hemorrhage does not involve the capsule primarily, but only by its reactive processes and its slow extension brings about the more far-reaching results.

GASTROPYLORODUODENOSTOMY

WITH EXCISION OF THE ULCER-BEARING AREA FOR ACUTE PERFORATED ULCER IN THE PYLORIC CANAL *

VINCENT ANTHONY LAPENTA, A.M., M.D.
INDIANAPOLIS

History.—C. P., man, aged 26, while standing on the sidewalk in front of his residence, May 16, 1914, talking to friends, was seized with an acute excruciating pain in the upper abdomen. So intense was the pain that it caused him to fall to the ground unconscious. The friends who picked him up and carried him into the house noticed that he vomited a small quantity of blood.

About one hour after this happening, he was seen and found still in a semicomatose condition, pulseless at the wrist, with cold, clammy sweat covering his body, the respiration entirely thoracic, his face having a very pinched and blanched expression. He was found sitting in bed with the body acutely flexed on the knees. No amount of persuasion could induce him to change this position. It was impossible to examine his abdomen carefully. He would allow no one to touch it. No information or clinical history could be obtained from him. All the facts on which to evolve a working diagnosis had to be obtained from bystanders who had witnessed the attack and knew nothing about the patient. Information obtained from relatives was no more illuminating. They said that he had always been well and had never lost a day's work. That morning he complained of a headache, but had eaten a very large meal at noon.

The diagnosis of perforated gastric ulcer instinctively fixed itself on my mind. Indeed, I could not think of a gallbladder perforation, as there would have been no hematemesis in such a condition, nor would such a perforation be likely to occur suddenly, without the occurrence of a few biliary colic pains. Of great weight, also, was the assurance received from the family that the patient had never had any acute gastric distress or acute abdominal pains before. I was also impressed by the unmistakable signs of shock and pinched expression. An acute perforated appendicitis could cause the same type of shock, but I have never seen the occurrence of hematemesis in these cases.

The patient was quickly taken to the Protestant Deaconess Hospital, a hypodermic of morphin, one-fourth grain, and atropin, 1/150 grain, was given, and a hasty preparation made for an abdominal section.

Operation.—A long paramedian incision was made on the right epigastric region, extending down to the right iliac fossa. When the peritoneum was opened, a large amount of blood and gastric contents escaped. From the amount of food and liquid in the abdomen, it was evident that the patient had had an excellent dinner and had certainly not lacked in wine. A careful surgical toilet was made, and the examination of the viscera was started at the stomach. Exactly in the pyloric ring and in the lower outer portion of it, a perforation large enough to admit the index finger was found. This was certainly a fortunate location for the perforation, as it enabled me to make a wide excision of the ulcer-bearing area, and it was possible to restore the pyloric end of the stomach, insuring a large pylorus, by employing the technic of Vidal, effecting a gastropyloroduodenostomy. To my astonishment, on examining the ileocecal juncture, the appendix was found to be acutely inflamed and with a cleancut perforation, with a little fecalith just extruding from it.

The appendix was removed in the usual manner. The abdomen was properly closed with adequate drainage being provided at the lower angle of the incision. An intravenous injection of physiologic saline solution had been given during the operation, and the patient left the table in a much better condition than before the operation.

The recovery was uneventful, the patient leaving the hospital after three weeks. A communication received from him in April informed me of his excellent health and absolute freedom from any symptoms whatsoever.

This case seems to me strongly to emphasize the etiologic rôle played by an appendiceal lesion in the production of acute gastric and duodenal ulcers. This case, whose final issue would have been death, in my opinion, seems to have had its basic etiology in the appendiceal lesion. I am induced to attribute to the concomitant acute appendicitis more importance than that of mere coincidence.

Dieulafoy and D'Antona have held for many years that an appendiceal lesion can be the primary focus which may set up metastatically an ulcerative process in the stomach and duodenum. Indeed, they have conclusively proved that even acute gastric hemorrhage without ulcer may be produced by an appendiceal lesion.

If I am correct in assigning to the appendiceal lesion a greater importance than that of a mere coincidence, we may reasonably assume that acute appendiceal infections do play an important etiologic rôle in the production of acute gastric and duodenal ulcers, if not in those ulcers of the chronic type.

In a reasonably large number of gastric cases which it has been my good fortune to have had in the last four or five years, I have been impressed by the frequency of concomitant appendiceal lesions in my cases of acute gastric and duodenal ulcers and of their relative rarity in those of the chronic type, both of the stomach and the duodenum. Certainly this case stimulates much thought, and it has been for this reason that I have taken the liberty to report it.

347 Newton Claypool Building.

* Read at a meeting of the Indianapolis Medical Society, May 4, 1915.

ACUTE ARTICULAR SINOVITIS OF CRYPTIC NASOPHARYNGEAL ORIGIN

W. SOHIER BRYANT, A.M., M.D.
Fellow of the American College of Surgeons
NEW YORK

The following case is presented as a justification of my theory[1] that the primary source (focus) of an infection or of anaphylaxis—whether general, metastatic, or local—is, as a rule, to be found in the nasopharynx, localized in Luschka's tonsil. The case described was one of acute poliarticular "rheumatic" sinovitis.

History.—The patient, a man, aged 26, had been under treatment by the usual internal and external remedies in a large orthopedic hospital with little relief. No focus of infection had been located, in spite of well-directed effort.

He had been subject to severe attacks of "lumbago" as long as he could remember. The present illness began in the right knee. Pain and a large effusion in the right knee and ankle had lasted for six weeks, while the right hip had been painful and useless a week. He came to the office on

1. Bryant, W. S.: Air-Borne Infections, Their Mode of Entrance; Preventive, Abortive and Ameliorative Treatment, Med. Rec., New York, May 16, 1908, p. 816; the Involution of the Naso-Pharynx, and Its Clinical Importance, Am. Jour. Med. Sc., 1914, cxlviii, 61.

crutches, walking with difficulty. He said that he had always been a nose breather by day, but a mouth breather by night. Since childhood, he had had no sore throat, but he often has "neuralgia" over his eyes.

Examination.—When the patient came to me, he was thin, with haggard facies, and was unable to stand or walk without crutches. The right hip was very painful on motion and tender. The right knee had a very large effusion, and was painful; the right ankle was tightly distended, painful and tender. The man could bear no weight on the right leg at all, or bend the joints or sit on right hip. He could sit on the left side only. The examination showed a red pharynx. There was also nasal obstruction from a deflected septum. The tonsils were negative in appearance. Posterior rhinoscopy showed an enlarged soft adenoid which bled very readily. The left adenoid was the larger. Small lymph nodes were palpable along both jugular veins. There was no subjective symptom of the throat, however, and no obvious indication that any infection was present.

Treatment and Result.—The first treatment began with postnasal applications of hydrogen peroxid through the nose, followed by a 10 per cent. solution of silver nitrate and a chinosol nasal douche. The following day, the patient reported that he had felt relief in a half hour after the treatment of the previous day. When he came to my office this day, he had a good color, and his expression was no longer pinched. He said that the pain had entirely gone during repose. He was able to walk without crutch or cane, and could sit down normally. Palpation detected scarcely any fluid in the knee. A saturated solution of ferric ammonium sulphate and menthol and eucalyptol was applied.

On the fifth day of treatment, the hip had entirely recovered, and the nasopharynx also was well. The patient himself was much better and all pain was gone, both at rest and during locomotion. On the twenty-third day, after eleven treatments, there was no sign left of the old "rheumatism."

Here is a case of acute polyarticular "rheumatic" sinovitis. Under the usual hospital treatment the case was prolonged and convalescence delayed. The source of the rheumatic infection had not been located. On inspection of the postnasal adenoid or Luschka's tonsil region, the cryptic infection was discovered.

CONCLUSION

When, in cases of acute articular inflammation, the primary iufection is not obvious, a cryptic infection probably thrives in the nasopharynx. Luschka's tonsil is the most usual seat of cryptic infections that extend to the general system or form metastatic inflammations.

19 West Fifty-Fourth Street.

REPORT OF CASE OF UNILOCULAR OVARIAN CYST

AGNES M. EDMONDS, M.D., CHUNGKING, CHINA
Physician in Charge, Gamble Memorial Hospital

The patient, Mrs. H., came from a wealthy family; a clear family history was difficult to obtain, but she had no knowledge of any other member of the family having had a similar tumor; she had smoked opium for several years, which fact she succeeded in concealing from us until after the operation, by secretly taking pills.

The tumor had been growing for four or five years; there had been no severe pain, but great discomfort. When brought to the hospital the patient was also suffering from a severe attack of diarrhea, which, however, we succeeded in getting under control before the operation.

On measurement we found the patient to be 4 feet 10 inches tall and 5 feet 8½ inches in circumference at the waist line.

With an assistant on each side, she could with great exertion walk a few steps; getting her to the operating room, which is situated on the second floor, and on the operating table was a problem. As one of the visiting physicians aptly remarked, it was a case of engineering as well as surgery. She was too broad to sit in a rolling chair or balance herself on a stretcher, so we had four coolies carry her on an improvised stretcher—a woven cane bed—and when she was finally transferred from that to the operating table, we had to put her at an angle of 45 degrees, reclining on her side, with two assistants under the tumor to support it.

An incision about 3 inches long was made through skin and peritoneum just below the umbilicus, the cyst tapped and over 100 pounds of dark brown fluid removed. The cyst with its contents weighed 139½ pounds. The incision was then extended above and below, when, on examination, the cyst wall was found to be bound by heavy adhesions to the abdominal wall, intestines and omentum, while the pelvic organs, including the bladder, formed a solid mass for the pedicle.

The bladder was carefully dissected away from the mass, although in several places the adhesions were so dense that a portion of the cyst wall had to be left, and in spite of the utmost precaution the bladder was entered. After the bladder wall was finally dissected free, the rent was sutured, the pedicle clamped and tied, and the cyst wall, including both the ovaries and uterus, removed. The stump was covered with peritoneum and dropped back into the pelvis. About a quart of normal salt solution was poured into the abdominal cavity, and the abdomen closed. In the meantime the patient was very much in shock. Gradually, as the abdominal contents were removed, she had been placed in the horizontal, and finally in the Trendelenburg position. Intramuscular and intravenous infusions of normal salt had been given, while strychnin, nitroglycerin and pituitary extract had also been administered.

Recovery was uninterrupted. In three days the patient was urinating, the bowels moved without even a laxative being given, and in five weeks she left the hospital cured of her opium habit, and with no bad after-effects from the operation.

Six months after the operation she continues in good health.

The physicians who so kindly assisted in the operation were Drs. McCartney and Freeman of our own (Methodist) mission, Dr. Sheridan of the Canadian Methodist Mission, and Dr. Post of the American gunboat *Palos*, who was then in port.

The Physician and Health Administration.—In a reprint in Public Health Reports of a paper read by J. W. Trask before the Tennessee State Medical Association he again emphasizes the responsibility and the opportunity of the physician with reference to effective health administration and disease prevention. He says the principal function of the federal health department is the control of epidemics and the prevention of the spread of disease from one state to another. In order to accomplish anything in this respect it is necessary to have prompt and accurate information of the occurrence of epidemic diseases from every section. For this information the service is dependent largely on local boards of health, and they in turn depend on the notification of such diseases by physicians who come in contact with the individual cases. He says that physicians are still remiss in reporting cases to their local health departments, and do not recognize as they should that they are essentially a part of the health department. He says, "The practicing physician who fails to report a case of a communicable disease thereby endangers the welfare of the community and exposes others to the danger of contracting the disease, and among those thus exposed may be others of his patients. He is neither a good physician nor a good citizen, and must be considered as opposed to the principle of the control of disease and the protection of the community for which the health department stands."

DISCUSSION
ON
BLASTOMYCOSIS OF THE EYELIDS, WITH REPORT OF CASES*

EDWARD JACKSON, M.D.,
DENVER

DR. ROBERT FAGIN, Memphis, Tenn.: I am reporting five cases of this disease which have appeared in Memphis. Each case has been worked out pathologically by Dr. Marcus Haase, and in each instance the organisms demonstrated and cultures grown. (The cases and lesions were illustrated with the lantern.) The first is my case, a negro man, aged 39, from Mississippi. The patient came in November, 1913, with a lesion on the right eye. This lesion had been removed five times previously at different hospitals in Mississippi. Two of the best surgeons of Memphis said it was cancer and should be cut out. My partner, Dr. Simpson, had studied several cases of blastomycetic dermatitis in Chicago and had had a case of this kind in 1906. Dr. Simpson at once suggested that it was blastomycetic dermatitis. I thought it was an infected epithelioma or syphilis. Pus was trickling down the side of the face. The patient had suffered from the lesion for two years. Pus and a section of the growth were taken for diagnosis. Examination proved it beyond doubt to be blastomycetic dermatitis. Under potassium iodid and a few treatments of the Roentgen ray the lesion soon disappeared. The man, however, died suddenly about six months later. As far as we know there has been no involvement of brain tissue by a blastomycetic infection. If this was not a brain lesion we do not know what caused his death. The second case is the first instance of blastomycetic dermatitis reported from Memphis, in 1906. This was Dr. Simpson's case. The illustration was made in May of this year, and shows the healed lesion. The resulting ectropion was corrected by Dr. Simpson by an operation. The third case was one of fifteen years' duration. It was not recognized until 1908. The lesion extended over on one side, traveled below and across the nose, and involved the other side. The lesion healed. This and the others reported are Dr. Haase's patients. The fourth case is the only white patient in our list. Quite a deformity of both lids followed the healing of the lesions. Dr. Ellett operated on this patient in May, 1915, and corrected the ectropion. Case five is of another colored man. This lesion commenced as a stye in the corner of the eye and progressed outward. Also there are lesions on his arms and legs. We think the infection has been carried from the eye to other parts of his body by scratching. The lesion is made up of abscess cavities. Pus is expelled from these cavities when pressed on. Finding the organism is the only means of differentiation from epithelioma or tuberculosis. The lesion will disappear readily under potassium iodid, 30 grains three times a day, increasing to 300 grains. Roentgen-ray treatment helps.

DR. HAROLD GIFFORD, Omaha, Neb.: I have been looking for cases of blastomycosis for a number of years without success, but while hunting for it I came across a case of sporotrichosis. This may sometimes assume characteristics which are not dissimilar to blastomycosis. The formations are quite different, however. It has two points which easily define it. It has a characteristic form under the culture medium. In culture the organism develops readily. We failed at the first trial because we put the tubes in an overheated oven and after two or three weeks, when nothing developed, we gave up the experiment. By accident, however, we left a tube lying carelessly on a table where we had been conducting our experiments and in about two weeks, by mere chance, we noticed it was covered with a beautiful culture of sporotrichosis. Another point in differentiation is a tendency of the sporotrichosis organism to form along the lymph channels. I believe this has not been true in blastomycosis. I merely want to remind you that in looking for blastomycosis do not forget the other.

DR. JOHN A. DONOVAN, Butte, Mont.: About five years ago a patient, a fisherman, came to me with a diagnosis of syphilis which he felt certain was not correct. His trouble was on the side of his face and eyelids. I did not know what diagnosis to make and I have wondered all these years what it was I treated. I put the patient on biniodid of mercury and Roentgen-ray treatment, and later changed this for the arc light, which gave better results. Between the internal and light treatments he got well. When he came to me he told me he had been treated by a surgeon of Salt Lake City and that surgical treatment made it worse.

DR. GEORGE S. DERBY, Boston: I hesitate to report this case as I have not seen it. However, Dr. MacDonald was kind enough to send me rather a long telegram last night about a case of blastomycosis which occurred in my service at the Massachusetts Charitable Eye and Ear Infirmary since I left Boston. The patient was a wood-chopper. The lesion first appeared on the bridge of his nose. It spread on the lids of each eye, and he is said to have sores on the right shoulder and both breasts. He was taken into the Massachusetts State Almshouse Hospital three times during the past three years and operations were performed on his lids and face. The microscopic examination showed blastomycosis. There was a slight corneal scar on the right eye, but in spite of this the vision in each eye was normal. The right eye showed marked conjunctival injection and ectropia; two-thirds of the lids had disappeared and the palpebral fissure was narrowed. The left eye showed some ectropia nasally and loss of tissue in the lower lid.

DR. EDWARD C. ELLETT, Memphis, Tenn.: I have seen several of these cases of blastomycosis and have been struck with the marked cicatricial contraction which follows the healing of the lesions. I have noticed, too, that the lid would be spread out to fall over the whole cheek and produce a degree of ectropion that I do not remember to have seen from any other lesion. In colored individuals the cicatrix is nonpigmented. The skin is left perfectly clear and this forms a striking and distinctive feature. The spreading of the lesions is very irregular and not along the blood or lymph channels. In one case that Dr. Fagin referred to the patient developed a lesion on his right leg, on the other side from the original lesion. The involvement of the eyeball in the cases I have seen, as in the experience of Dr. Jackson, was apparently accidental.

DR. EDWARD JACKSON, Denver: The pictures shown give an idea of the lesions that cannot be obtained from any description by words. With reference to the diagnosis of sporotrichosis, such a case would give a different history; and there is a difference in the manner of the spread of the affection, as mentioned by Dr. Gifford. The spread of blastomycosis is very much like a culture on the gelatin plate, and the lesion has a tendency to ultimate healing. It is like erysipelas, getting better in one spot and at the same time growing worse in another. Without any particular treatment the whole anterior right half of my patient's head had been the seat of lesions, beyond the median line and back of his ear, up on the scalp. The lesion was on the cheek when I saw him, extending in several directions. The history of such lesions and these pictures would be sufficient for diagnosis. Anyone who has seen these pictures ought to be helped tremendously in making the diagnosis. With reference to treatment, the Roentgen ray has been mentioned favorably. Pusey of Chicago in reporting a case ascribed all the benefit to the Roentgen ray, but he also gave potassium iodid, perhaps 10 or 20 grains at a dose. This he thought so small a dose that it did not count for anything in the cure. My second case got up to 37 or 38 grains of potassium iodid before the lesions were healed. In the second case I started with 10 grains. Larger doses are fully justifiable. The records show uniformly that potassium iodid is beneficial and brings results. Operative interference is bad. This patient, who had been ill for seven months, had had four distinct operations and was growing constantly worse.

* The paper by Dr. Jackson appeared in THE JOURNAL, July 3, 1915, p. 23. It was read before the Section on Ophthalmology at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

Special Article

PRACTICAL PHARMACOLOGY *

(Continued from page 29)

XXVII

THE HEAVY METALS AND THEIR SALTS

The salts of the heavy metals act locally as astringents, irritants or corrosives, dependent on the nature of the compounds which they form with the tissues; thus the lead salts, which are astringent when used in dilute solution, are corrosive when concentrated solutions are employed.

The intestinal mucous membrane acquires a certain degree of tolerance toward irritant action of the metals if small doses are given at first, and gradually increasing amounts are employed. The large amounts of arsenic taken by the arsenic eaters of the Tyrol afford a well-known example of this acquired tolerance.

The salts of metals which dissociate readily into their ions have many actions in common after the absorption of toxic doses into the circulation. The marked differences in the effects commonly observed after their administration are attributable in part to differences in their rates of absorption, in part to differences in their rates of dissociation. Arsenious acid is absorbed fairly well from the gastro-intestinal tract and it dissociates readily, hence it is actively poisonous, whereas most of the salts of iron and lead are absorbed so slowly that toxic symptoms rarely follow the administration of single doses of them.

When soluble salts of the metals are administered they are partially converted in the duodenum into insoluble carbonates or into albuminates, in which form they may be absorbed, or they may pass into the large intestine, being converted into sulphids. A larger part of the dose of the metallic salts escapes absorption and the sulphid renders the feces black.

Slow as the absorption of the metals usually is their excretion is commonly even slower, so that they may accumulate in the body and give rise to symptoms of poisoning. This action is prominent in the case of lead, even when minute amounts are taken over prolonged periods.

Most of the metals are excreted through the large intestine mainly, and to a slight extent through the kidneys. The irritant action at the seat of elimination in the intestine may give rise to enteritis and diarrhea, aside from any local irritant action and diarrhea induced by the unabsorbed portion, as with calomel.

The excretion of metals by the kidneys may give rise to nephritis, this being especially prominent after poisoning with mercuric salts.

The intravenous injection of toxic doses of the metallic salts or the rapid absorption of one of the arsenites, such as potassium arsenite, causes a rapid fall of blood pressure due to the direct action on the heart and vessels. This is attended with disturbances of the central nervous system, as profound circulatory disturbances always are.

The astringent and irritant local effects of the salts of some of the metals are utilized therapeutically, but the systemic effects just mentioned are of toxicologic, rather than therapeutic, interest.

* This is the twenty-seventh of a series of articles on useful drugs—on practical pharmacology for the general practitioner. As soon as completed, these articles, elaborated by additional subjects, will be published in book form.

LEAD

The systemic effects of lead are of little or no therapeutic importance but they are of toxicologic interest.

Acute lead poisoning is not observed frequently, but a single large dose of one of the lead salts may cause gastro-intestinal irritation with nausea, vomiting and diarrhea, which may be bloody, or constipation with pain, and in exceptional cases these symptoms may be followed by collapse. The acute symptoms are said, in rare instances, to be followed by chronic poisoning.

Chronic lead poisoning is said to be the commonest of all forms of metallic poisoning owing to the widespread use of the metal and its constant absorption with slow elimination.

It is stated that workers in more than one hundred trades are liable to lead poisoning, especially where suitable precautions are not observed. Dust should be avoided as much as possible in lead works, work rooms should be ventilated thoroughly, and workmen should avoid putting their hands in their mouths or holding articles between their teeth. Food should not be kept where it can be contaminated with the dust arising from the metal work, and clothes should be changed when the workmen leave the work room.

Painters and other workers in white lead are said to be most frequently attacked, and lead smelters, plumbers, typesetters, electricians, potters, enamel ware workers and dyers are said to be affected frequently.

The use of new lead pipes for conveying drinking water is said to be a common source of plumbism, but this is probably less dangerous than is popularly supposed, for the bureau of health of the city of New York requires that lead pipes be used to connect houses with the public water mains, and poisoning seldom results from the use of this water.

Wall paper, solder used in sealing canned foods, and even hair dyes are said to be sources of lead poisoning. The cosmetic known as flake white (lead carbonate) is sometimes responsible.

Nausea and loss of appetite with a metallic taste in the mouth are among the earliest symptoms of chronic lead poisoning. A bluish line may appear on the margin of the gums but this may be absent when the mouth and the teeth receive proper attention. Anemia is also an early symptom and it may be the only one to attract attention. Sollmann states that at first there may be a pallor due to a constriction of the cutaneous vessels and later a diminution of the hemoglobin and the number of red blood corpuscles. The red blood cells frequently undergo granular degeneration, the granules staining with basophil dyes. If there is extensive destruction of the red cells there may be jaundice and highly colored urine. This granular degeneration of the red cells is characteristic, and may afford the first clue to the nature of the disease.

Amenorrhea is not infrequent in women so poisoned and lassitude and weakness are frequently observed.

Lead is said to cause gout or a predisposition to it in regions where gout is prevalent.

It is well known that abortion is a frequent result of lead poisoning in pregnant women, and Cushny states that abortion is common among women workers in lead even when they do not show other symptoms of plumbism. Children born to parents either of whom suffers from chronic lead poisoning are weak and seldom live to reach adult life.

Various manifestations of lead poisoning are due to its actions on peripheral nerves, but the central nervous system may be concerned in certain of these manifestations. Lead causes a general peripheral neuritis affecting both motor and sensory nerves, but certain groups of nerves are much more frequently affected than others, and colic, wrist-drop, anesthesia or excessive tenderness of the skin, arthralgia and disturbances of vision are among the most frequent effects of the actions on the nerves.

Colic is among the most constant symptoms of chronic lead poisoning and Bastedo cites Starr to the effect that it precedes palsy in more than 90 per cent. of the paralytic cases. The attacks come on suddenly, the paroxysms alternating with periods of relative comfort. During the paroxysms the abdominal muscles are tense and hard, the patient often lies face down and obtains some relief by pressing his fists against the region of the umbilicus where the pain appears to be localized. The colic is usually accompanied by obstinate constipation and attacks of vomiting, but occasionally there is diarrhea. The paroxysms of colic are due to spasm of the intestinal wall, but the precise mechanism by which the spasm is induced is not known with certainty. Sollmann attributes it to a stimulation of the nerve endings (vagus) in the intestine as it lacks the peristaltic nature of ganglionic stimulation and it sometimes yields to atropin, which paralyzes the vagus endings.

The intestinal spasms are attended with high blood pressure, which Sollmann also explains as being due to pressure exerted on the splanchnic vessels, whereby the blood is forced into the peripheral circulation.

The paralysis of the extensor muscles in the forearm is also fairly characteristic of chronic lead poisoning. The middle and ring fingers are usually involved before the thumb and index and little fingers, the wrist being affected later, the condition being commonly termed wrist-drop. The neuritis may be followed by degeneration that extends to the cord and this is followed by rapid atrophy of the extensors, when the unopposed contraction of the flexors gives the hand a claw-like appearance.

Bastedo states that the general peripheral neuritis may be similar to that resulting from alcohol and that it may at least superficially resemble locomotor ataxia.

Among the sensory disturbances are anesthesia, which sometimes begins suddenly and disappears after a few days, or there may be intense pain in certain joints and muscles near them, or great tenderness over different areas of the skin.

Various disturbances of the brain are described under the title of saturnine encephalopathia; these include intense headache, vertigo and mental depression, but these manifestations are said to be rare when the earlier stages of chronic lead poisoning are treated properly.

Lead shares with other metals their irritant actions on the kidneys, and nephritis is a constant result of chronic lead poisoning; lead may possibly induce arteriosclerosis.

Prophylaxis is of the first importance with reference to lead poisoning, but it is not always possible to foresee when one will suffer from its effects, since many escape under conditions that lead to poisoning in others.

Persons who suffer from anemia or general ill health, and those who have suffered from lead poisoning are especially susceptible to its effects. Those who are exposed to the effects of lead have been advised to take very dilute sulphuric acid with a view to converting any of the metal that may be swallowed into the relatively insoluble sulphate, but this should not be permitted to give a false sense of security and cause the neglect of more important prophylactic measures, and it cannot be understood too well that the insolubility of a substance in water does not necessarily mean that it is not absorbable from the gastrointestinal tract.

An overdose of a soluble lead salt frequently causes vomiting that serves to remove practically all of the poison from the stomach, thus preventing further symptoms, but even in such cases it is well to give a dose of magnesium sulphate and wash the stomach in order to remove the resulting sulphate of lead, after which a second dose of magnesium sulphate may be administered with a view to inducing purgation and removing any of the lead that may have escaped from the stomach into the duodenum.

In the absence of sulphate of magnesium or sulphate of sodium one may administer egg-white or milk in order to form the insoluble albuminate of lead, but in any case the precipitate must be removed as promptly as possible. If vomiting and diarrhea have already resulted from the local action of the lead, magnesium sulphate may be administered in order to convert any remaining lead into the sulphate and hasten its passage from the intestinal tract.

Those who work in trades in which lead poisoning is an ever-present danger should be instructed to consult a physician on the appearance of the earliest symptoms such as the metallic taste in the mouth and the loss of appetite.

When a diagnosis of chronic lead poisoning is made one should not be content to find a single source of the intoxication, but owing to the frequency with which minute amounts of lead find entrance into the body from such a variety of sources, the physician should exercise especial care to exclude all sources of poisoning, for a lead worker having become poisoned through the pursuit of his trade may at the time be absorbing minute amounts from other sources. These minute amounts might be harmless to one in good health but might be extremely injurious to one already suffering from the effects of the metal.

The treatment of chronic plumbism includes the relief of symptoms and elimination of the poison.

Atropin paralyzes the vagus endings in the intestine abolishing the intestinal spasm, and with it a nonirritant evacuant, preferably a saline, should be used to empty the bowel. An excessively high blood pressure independent of that caused by the mechanical pressure on the splanchnic vessels is apparently concerned in the colic, and a vasodilator, such as amyl nitrite, frequently affords relief.

Since the local action of atropin is desired in such cases it would seem better to administer it by the mouth in order that it may reach the nerve endings in the maximum concentration. Since, however, the intense vagus stimulation (if indeed that is the cause of the spasm) may also cause spasm of the pylorus and interfere with the passage of the drug into the intestine after its oral administration, it may be necessary to inject the drug subcutaneously. Even in that case one may fail to elicit the full effect on the nerve endings, not only because of its greater dilution in

the general blood stream but because the anemia attending the intense splanchnic constriction interferes with the drug's reaching the endings in the intestine. In such a case it would seem logical to give amyl nitrite by inhalation or nitroglycerin subcutaneously, followed immediately by atropin intramuscularly. If a single dose of atropin (1 mg. or 1/60 grain) does not relieve, it may be repeated once or even twice.

Opium or morphin may be required for the relief of the intense pain attending the paroxysms of colic and for the relief of the joint pains that usually come later in the course of poisoning. Gout requires the same treatment as that arising under other conditions.

Lead, like other metals, is excreted in part by the kidney, but mainly by the intestine, and while it is stated that the intestinal epithelium participates in the excretion, the fact that the metal is stored more abundantly in the liver than in the other tissues suggests that that organ is responsible for the elimination of the larger part of that remaining in the body after absorption has ceased.

Potassium iodid has long been used to hasten the elimination of the metal, but it seems probable that it has little effect on the excretion of the metal stored in other parts of the body, but it may lower blood pressure and assist the action of diuretics.

Diuretics are also commonly used to hasten elimination and while they, too, have probably but little effect on the elimination of the metal stored in other parts of the body, they may lessen the local action on the kidneys by hastening the process of elimination of that actually stored in them.

The foregoing discussion might lead one to suppose that the diagnosis of chronic lead poisoning is comparatively easy. While it is an extremely simple matter in typical cases, there are many cases presenting such obscure symptoms that the diagnosis will tax the ingenuity of the most careful physician to the utmost. It must be remembered that traces of lead may be found in the urine and feces of persons in health, and that while its detection in the excreta of persons presenting other characteristic symptoms is strong evidence of chronic plumbism, the detection of traces of lead in the urine and feces cannot be accepted as conclusive proof of poisoning by it.

The systemic actions of bismuth, copper, silver and zinc are of some toxicologic interest but they do not require detailed discussion here.

Numerous attempts have been made to utilize the systemic effects of colloidal metals, colloidal silver having been exploited widely as a systemic germicide and antiseptic. The use of colloidal copper has also been suggested, but the results are not encouraging.

Iron

The normal human body contains some 3 gm. (45 grains) or less of iron, the greater part being present in the hemoglobin of the blood. It is generally stated that only a few milligrams of iron are eliminated from the body daily in the feces and urine, this loss being made good from the iron contained in the food. It is supposed that roughly one-tenth of the hemoglobin of the blood is destroyed daily, the pigments being eliminated in the bile, but the iron is evidently utilized again and again in the formation of hemoglobin, the absorption of extremely small amounts sufficing to make good the loss already mentioned. It is seldom that the normal diet contains an insufficient amount for the daily needs, but in disease there is often a disturbance of metabolism which prevents the utilization of the iron of the food and additional supplies are required to be administered therapeutically.

Iron has long been used empirically in anemia, but its rational use dates from 1746, when it was discovered that it is a constituent of the red blood corpuscles. Since then there have been many investigations intended to show the form in which iron is taken into the circulation and in which it is utilized in the formation of hemoglobin.

Bunge believed that only those forms of iron which exist in the food, such as meats and vegetables, were absorbed and he suggested that in the form of nucleoalbuminates they escaped conversion into the insoluble sulphid in the intestine, but that, under certain pathologic conditions, even these might be attacked by the hydrogen sulphid in the intestine, and their absorption prevented. He suggested further that in such conditions the administration of ferrous carbonate, or other inorganic salts of iron, would serve to prevent the action of the hydrogen sulphid on the iron of the food, which would then undergo absorption, as usual.

This theory of Bunge's is no longer held by physicians or pharmacologists, but it is still urged by certain interested manufacturers as the basis for their claims for the value of their preparations. On this basis is urged the use of preparations of manganese which are employed in anemia, as it is claimed that the manganese unites with the hydrogen sulphid, thus sparing the iron of the foods for absorption. One need only remember that iron is absorbed mainly in the duodenum and that there is no hydrogen sulphid in that part of the intestine, to recognize that administration of manganese can not affect the absorption of iron.

Bunge calls the iron which exists in the yolk of egg hematogen, and this is evidently the source of iron in the blood of the chick. One manufacturer placed a preparation on the market under the name of hematogen, but Bunge distinctly states that it is a waste of money to buy this expensive preparation.

Schmiedeberg isolated an iron compound from the liver of the pig, supposing this to be the immediate precursor of the iron in hemoglobin. While this may be the form in which iron exists immediately before it is built up into hemoglobin, there is no evidence that it is absorbed any better than other forms of iron.

Tartarkowsky bled animals repeatedly until they were unable to regenerate hemoglobin from stores of iron in the body, and fed some of these animals food free from iron, and others the same food with the addition of inorganic iron salts.[1] Those which received the iron with their food regenerated their blood and recovered their normal condition; those which did not, succumbed to the effects of the hemorrhage.

He also found that when animals which had been bled in this way received food containing an abundance of iron they regenerated hemoglobin as well as others which received similar food with the addition of inorganic iron, showing that in simple anemia organic iron in abundance suffices for the restoration of the blood. It seems probable that when the food does not contain an *abundance* of iron the addition of inorganic iron may be of benefit in simple anemia.

It is significant at least that widely different forms of vegetation are capable of supplying the animal

1. Those salts of iron which are precipitated by ammonium sulphid at room temperature are called "inorganic," regardless of whether they contain organic material or not, iron albuminate and peptonate being classed as inorganic.

organism with all of the iron which it requires for regenerating hemoglobin, and as this iron is almost certainly broken down before it is absorbed, we must suppose that both organic and inorganic forms may be utilized by the body for building up hemoglobin, but only careful clinical experience will determine which of these is preferable for therapeutic use.

At best there can be little difference between the organic and inorganic forms so far as their utilization is concerned, and clinical experience has, as yet, failed to indicate any advantage of one over the other.

The results of various experiments indicate that an amount of iron equal to about 5 mg. (1/10 grain) is excreted daily in the intestine and about 1 mg. (1/60 grain) in the urine, and it is evident that the diet should contain at least as much as is eliminated. It is in agreement with these estimates that Stockmann found that the normal daily diet of several healthy persons averaged about 8 to 10 mg. (1/4 to 1/6 grain) of iron, while the diet of two chlorotic females contained from 1½ to 3 mg. (1/40 to 1/20 grain).

The following table adapted partly from Bunge and partly from Stockmann, shows approximately the amounts of iron which various foods contain. Sugar, cream, butter, and white of egg are practically iron-free.

IRON CONTENT OF FOODS READY TO SERVE

	Mg.		
1 teacupful of boiled oatmeal	0.2	to	0.5
Two apples or oranges	0.1	to	0.5
500 gm. (about 1 pound) of grapes	0.4	to	1.0
Yolk of two eggs	2.0	to	5.0
500 c.c. (about 1 pint) of milk	1.0	to	1.5
500 gm. of white bread	2.5	to	5.0
500 gm. of whole wheat bread	5.0	to	15.0
1 teacupful of mashed potato	0.3	to	1.5
1 teacupful of boiled cabbage	0.5	to	3.0
1 teacupful of boiled carrots, peas or beans	0.5	to	2.0
1 teacupful of boiled spinach	3.0	to	15.0
500 gm. "blut-wurst"	50.0	to	125.0
100 gm. yellow ox-marrow (dried)	4.0		
100 gm. red calf-marrow (dried)	8.7		
100 gm. roast beef	4.0	to	12.0

The foregoing table shows that the normal diet need not contain an insufficient amount of iron, but it is not always convenient to order a diet for an invalid which will contain an abundance of it, but when ox-marrow, red meats, eggs, whole wheat bread, spinach or "blut-wurst" can be taken there will be no difficulty in supplying the normal daily needs. Hazel nuts, almonds and *green* vegetables are relatively rich in iron.

THERAPEUTIC USES

The use of copperas, or ferrous sulphate, as a disinfectant has been mentioned, and the astringent uses of iron will be considered later. Iron is used in various conditions attended with anemia, being especially useful in those cases in which the red blood corpuscles individually contain less than the normal amount of hemoglobin. There are few therapeutic facts that are better established than that iron is useful in chlorosis, and it is also apparently beneficial at times in secondary anemias. Organic iron is sometimes found to cause less gastric disturbance than the inorganic forms.

Owing to the uncertainties concerning the most absorbable forms of iron one might suppose that the intravenous injection of iron is indicated in those cases in which the oral administration is not followed by improvement, but it must be remembered that iron is extremely poisonous when administered intravenously, and when the oral administration is without results this is probably due to an inability to utilize the iron in the formation of hemoglobin, rather than to any want of iron in sufficient amounts in the blood-building organs. We have no reason, therefore, to suppose that intravenous injections are ever indicated.

It is said that the anemia of ankylostoma yields readily to treatment with iron. One writer records observations on more than 300 cases and states that reduced iron, ferric chlorid, and ferrous sulphate gave better results than organic iron compounds, such as the peptonate. Iron has been used in numerous conditions in addition to those mentioned, but without sufficient evidence of any beneficial action.

It has long been taught that moist ferric hydroxid is an antidote for arsenic if it be given while the arsenic is still in the stomach, as iron and arsenic react to form an insoluble compound which should be removed as soon as possible. Later experiments seem to show that this procedure is of doubtful value, as the arsenical compound seems to be broken down and the arsenic to be absorbed about as promptly as when no iron hydroxid is given. If the stomach is washed promptly, the antidote is probably of value, as the stomach then contains little but water (if that be used for washing it), and, as previously stated, the arsenic is rendered insoluble in water. When the stomach cannot be emptied promptly, however, the iron is probably worse than useless.

DOSAGE

It is obvious that the dosage of iron usually bears little relation to the amount which it is expected will be utilized in the formation of hemoglobin, and the amount administered is frequently regulated with reference to the tolerance shown by the stomach. There is little correspondence between the amounts of iron present in the doses of the different salts as commonly administered: for example, the dose of reduced iron is given as 65 mg. (1 grain) but larger doses are frequently used, whereas the average dose of the syrup of ferrous iodid contains less than one sixth as much iron as the average dose of reduced iron.

The dose of ferrous carbonate is 0.25 gm. (4 grains); of the pills of ferrous carbonate (Blaud's pill) two containing 0.06 gm. (1 grain) each of ferrous carbonate, are taken; of ferrous sulphate, 0.2 gm. (3 grains); of the dried ferrous sulphate two thirds as much as of the crystalline; of the syrup of ferrous iodid, 1 c.c. (15 minims); of iron and ammonium citrate or of soluble ferric phosphate, 0.25 gm. (4 grains); of the tincture of ferric chlorid, 0.5 c.c. (8 minims).

The well-known disadvantages of inorganic salts of iron, such as the difficulty of preventing the oxidation of the ferrous and the astringency of the ferric; the tendency of many of them to injure the teeth; the difficulty of securing absorption and their tendency to disturb the stomach, have led to the introduction of a very large number of official and unofficial, galenical preparations, while the numerous theories advanced with regard to the form of iron which is utilized directly in the formation of hemoglobin have resulted in the introduction of numerous proprietary preparations of iron, and of manganese intended as substitutes for iron, but there is not the least evidence that any of these proprietary preparations,[2] even those sponsored by eminent investigators, have any advantage over the preparations enumerated below.

(To be continued)

2. Examples of the way in which some of the proprietary preparations of iron or its substitutes are exploited are discussed in THE JOURNAL A. M. A., Sept. 23, 1905, p. 934; April 6, 1907, p. 1197, and April 23, 1910, p. 1389.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading-matter

SATURDAY, JULY 10, 1915

A HISTORY OF BOTANIC GARDENS

One of the stock figures of ancient and primitive medicine is the herb gatherer, the ῥιζοτόμος (*rhizotomus*) of the Greeks and Romans, who made his living by wandering about through forest and meadow, collecting medicinal roots and herbs and selling them. The herbal medicine of primitive man was, in fact, the origin of our therapeutics, and was frequently delegated to the so-called "wise women." These beldames, as the old dramatists show, would sometimes enlarge the sphere of their activities to embrace the triple functions of fortune teller, procuress and abortionist. The word "drug" is derived from the Anglo-Saxon verb *drigan,* to dry, referring to the dried collections of simples which were for a long time a medical commodity. The herbalists and drug sellers were naturally concerned to monopolize their business, and in order to frighten away the ignorant from collecting such plants for themselves, they encouraged and even invented superstitions to impose on the masses. To protect the doctor and the apothecary from these abuses, there arose the necessity of growing plants in special gardens set apart for the purpose, and these naturally clustered around the monasteries. From these monastic gardens it was but a step to the botanic and physic gardens of the medieval and Renaissance universities.

Mr. Arthur W. Hill,[1] assistant director of the Royal Gardens at Kew, England, and former university lecturer on botany at Cambridge, has published a delightful account of the history and functions of botanic gardens, illustrated with fine pictures. The earliest garden known and represented was that of Thotmes III (1000 B. C.), planned by Nekht, head gardener of the Temple of Karnak; but the modern idea of a botanic garden, for economic and scientific purposes, seems to have originated with the Chinese and was known to the ancient Aztecs. The Egyptian royal garden, with its rows of date palms, its vine pergola and lotus tanks, was really a pleasure resort. The earliest European botanic garden on record was the *hortus* at St. Gall (ninth century), with its *herbularis* or physic garden, the former of which was an oblong enclosure containing eighteen rectangular beds, while the *herbularis* was square and near the doctor's house. Here the monks cultivated their fruits and vegetables, gathered their medicinal simples and studied them. The epoch-making work of Abbot Mendel in the monastic garden at Brünn was, as Hill remarks, an offshoot of this idea. The earliest botanic garden attached to a university was that at Pisa (1544), which owed its origin to the suggestion of Francesco Bonafede, who held the chair of simples (*lectura simplicium*) at the University of Padua (1533), that a botanic garden be started there. This came to pass in 1545, and among the prefects of the Paduan garden were the eminent botanists Anguillara and Prospero Alpini. About 1561, there was added to the Paduan teaching an *ostensio simplicium* or demonstration of living plants for the students. John Ray, the English botanist, visited both these places in 1664, describing the Paduan physic garden as "well-stored," the Pisan as "meanly stored" with simples. Zurich acquired a botanic garden in 1560, and was followed by Bologna (1568), Leyden (1577), Leipzig (1579) and Paris (1597), the latter being the original of the Jardin des Plantes (1635). John Gerard, of the famous "Herball" of 1597, catalogued in his physic garden at Holborn in 1596, listing 1,030 plants, the first catalogue printed. The Jardin des Plantes had about 1,800 species under cultivation in 1636, and 4,000 in 1665. Heidelberg had a garden before 1600, and, in the seventeenth century, gardens were established at Giessen (1605), Strassburg (1620), Oxford (1621), Jena (1629), Upsala (1657), Chelsea (1673), Berlin (1679), Edinburgh (1680) and Amsterdam (1682).

Private physic gardens were owned in England by Thomas Johnson at Snowhill (1633), by John Parkinson, apothecary to James I, and John Tradescant, whose private collection of curiosities became the present Ashmolean Museum at Oxford. The land for the Oxford garden was given by the Earl of Danby, and a greenhouse or conservatory was put up in 1670. The Edinburgh garden was founded by the physicians Sir Robert Sibbald and Sir Andrew Balfour, "to safeguard the Practitioner against the Herbalist and to enable him to have a correct knowledge of the plants which were the source of the drugs he himself would have to compound." It still retains its connection with the medical school and is described as an ideal garden for instruction. The Chelsea Physic Garden, founded as the Garden of the Society of Apothecaries in London (1673), was originally at Westminster, but was moved to Chelsea in 1776, the freehold having been purchased for the society by Sir Hans Sloane in 1712 and conveyed to it by deed in 1722. It contained the first specimen of cedar of

1. Hill, A. W.: Anniversary Proceedings, Missouri Botanical Garden, St. Louis, 1915, ii, 185. This would appear to be the first detailed history of the subject since the German monograph of A. Kerner von Merilaun, Innsbruck, 1874.

Lebanon in England (1683), the final survivor of the original four planted having been removed as late as 1904. The heating arrangement of its greenhouses by a vaulted subterranean plant was an innovation, noted by Evelyn in his diary in 1685. The Berlin garden of 1679 was reorganized in 1801, and was removed from the heart of the city to Dahlem in 1909. Its splendid collections, institute and museums make it now one of the finest schools of botany in the world.

At the end of the eighteenth century, there were about 1,600 botanic gardens in Europe, including Petrograd (1713), Vienna (1754), Kew (1759), Cambridge (1762), Madrid (1763), Coimbra (1773) and the Glasnevin Garden of the Royal Dublin Society (1790). Tropical and subtropical gardens existed at St. Vincent (1764), Calcutta (1786) and Sydney (1788). The lovely Kew Gardens, celebrated in literature by Matthew Arnold and William Ernest Henley ("On the Way to Kew"), and in the lines of Erasmus Darwin:

> So sits enthroned, in vegetable pride,
> Imperial Kew by Thames's glittering side,

was originally a royal preserve first in charge of William Aiton, and afterward of Sir Joseph Banks, who made it an unrivaled center "of botanical exploration and horticultural experiment." The first botanic garden in America was established by John Bartram at Philadelphia in 1728. It was followed by the Elgin Botanical Garden, founded by David Hosack (1801), which became the Botanic Garden of New York State (1810), acquiring the celebrated herbariums of Torrey, Chapman and Meisner; and the fine and complete Botanic Garden of Harvard University (1805); which, with the Gray Herbarium (1864) and the Arnold Arboretum (1872), is "a Mecca for botanists all the world over." In our modern period were also founded the tropical and subtropical gardens at Penang (1801-1884) and Singapore (1823-1878), which are associated with the name of Sir Stamford Raffles (of the *Rafflesia*), also those of Rio de Janeiro (1808), Buitzenorg, Java (1817), Cape Town (1848), Durban, Natal (1853), the restoration of the St. Vincent garden (1890), the National Botanic Garden of South Africa at Kirstenbosch (1913), and many flourishing gardens in Australia, Tasmania and New Zealand. In addition to the American gardens already mentioned, those at Berkeley, Cal., University of Pennsylvania (Philadelphia), Smith College, Northampton, Mass., the Michigan Agricultural College (1877), the Medicinal Plant Garden of the College of Pharmacy of the University of Minnesota at Minneapolis (1910-1911), and the Wisconsin Pharmaceutical Experiment Station (1913) are of special interest in university teaching. The Missouri Botanical Garden at St. Louis, founded by Henry Shaw in 1889, and closely connected with the Shaw School of Botany of Washington University, has just celebrated its twenty-fifth anniversary, of which Hill's monograph is a pleasant memorial.

A HALF CENTURY OF ANTISEPTIC SURGERY

In a review of the scientific features in the development of modern surgery, Lee[1] has written:

> With the discovery of practicable anesthetics, the battle was only half won. The operation itself had lost much of its horror, but the tragedy of the subsequent days was unchanged. There were the almost inevitable suppuration of the wound, the putrefaction and sloughing off of tissue, the sickening odor, the high fever, the danger of hemorrhage, the slow healing, the complications of blood poisoning, erysipelas, gangrene and tetanus, the physical and mental anguish, and the uncertainty of the final outcome. The mortality from major operations was from 50 to 100 per cent.

Today, on the contrary, the opening of the abdomen, the chest or the skull no longer is equivalent to signing the death warrant of the patient. Pasteur proved that fermentation and putrefaction were neither spontaneous, on the one hand, nor due to occult causes, on the other, but are in reality the result of minute living organisms. Among the fruits of Pasteur's labors was the work of Joseph Lister.

It is sometimes stated that antiseptic surgery had its birth in 1867, when Lister reported, in the *Lancet*, his eleven cases of compound fracture, with a "preliminary note" on the antiseptic method of opening abscesses. He had furnished the first solution of the problem of how to prevent putrefaction in open wounds. As Stephen Paget[2] remarks, "Pasteur could prevent putrefaction in broth, by his aseptic method: but patients cannot be boiled, nor kept in filtered air, in flasks." To kill the germs in the wound, Lister at first chose phenol (carbolic acid). To prevent any more germs from getting in, he left untouched the scab or crust formed by the antiseptic and blood together on the wound. His first case, in March, 1865, failed; his next case, in August, was successful.

Half a century has elapsed since those memorable experiences. The wonderful strides which surgery has made during these years are fresh in our minds. The work of the surgeon is not confined to the repair of wounds, the correction of deformities, or the removal of tissues. Deficiencies may be supplied by transplantation; transfusion is readily carried out; a new era in reconstructive surgery has been inaugurated. There is no reason to believe that the end of these progressive advances in surgery in recent years is in sight. As a recent writer has remarked, surgery is no longer merely an art of skilful cutting and sewing; it has risen to the higher level of a science.

The incalculable benefit of Lister's studies and of that which has grown out of them can best be appreciated in the contemplation of the surgical infections which, in the memory of physicians now living, were once the dread of all operating surgeons. Roswell Park[3] has thus recorded his impressions of the earlier days:

1. Lee, F. S.: Scientific Features of Modern Medicine, Columbia University Press, New York, 1911.
2. Paget, Stephen: Pasteur and After Pasteur, London, 1914, p. 36.
3. Park, Roswell: An Epitome of the History of Medicine, Philadelphia, 1898, p. 326.

I deem myself fortunate in this—that I have been a living witness of the benefit of change from the old to the new, since when I began my work, in 1876 (over twenty years ago), as a hospital intern, in one of the largest hospitals in this country, it happened that during my first winter's experience—with but one or two exceptions—every patient operated upon in that hospital, and that by men who were esteemed the peers of any one in their day, died of blood poisoning, while I myself nearly perished from the same disease. This was in an absolutely new building, where expenditure had been lavish; one whose walls were not reeking with germs, as is the case yet in many of the old and well-established institutions. With the introduction of the antiseptic method, during the two years following, this frightful mortality was reduced to the average of the day, and in the same institution today is done as good work as that seen anywhere. The same was true without exception in the great hospitals of the Old World; and in Paris, where, thirty years ago, famous surgeons would go from one end of the building to the other, handling one patient after another without ever washing their hands, and where erysipelas and contagion of various kinds were thoroughly distributed, as it were, impartially, now the successors of these very same men, employing modern methods, get results which challenge comparison.

Those who fail to recall the historical development of the modern surgical technic are sometimes wont to assume that because certain current aseptic procedures have entirely superseded the antiseptic devices introduced by Lister, the advantages of his precautions are no longer essential. It must be remembered, however, that antiseptic and aseptic are nothing other than two ways of arriving at one result. In the words of Sir William Osler: "It is the difference between tweedledum and tweedledee. They are both applications of the same principle." We cannot summarize the situation better than by quoting Paget.[2] It is true, he writes, that Lister was more afraid of the powers of the air, half a century ago, than surgeons are now: it is true that his use of a phenol spray, to sterilize the air around the wound, has been given up: but the law of all operations remains today that law which was revealed to Lister in 1865, in the light of Pasteur's work on putrefaction. From the very first, antiseptic surgery had in itself the making of aseptic surgery.

The principles defended and applied by Lister find applications in everyday life at the hands of the layman; their value is further attested in the prominence which they play in the modern military régime. The soldier on the European battlefields has been taught to apply an antiseptic dressing promptly to the wound he has received in action, and the enlightened teachings of Lister follow him through all the subsequent stages of his treatment to recovery. After a lapse of fifty years we may well pause to recall that Lister was instrumental in saving more lives than the armies of the greatest general or potentate have destroyed. Let us mark the anniversary on our medical calendar and pay a tribute to the masterful genius of Lister, "a man serene through controversy, a spirit of invincible patience and of radiant purity."

THE ETIOLOGY OF RHINITIS

Benjamin Franklin[1] is given the credit of being the first to point out that colds and coughs are catching, that is, transferable from the sick to the well. At present the infectious nature of the catarrhal conditions, commonly known as colds, is accepted generally, and the bacteria commonly present — pneumococci, streptococci, influenza bacilli, *Micrococcus catarrhalis*, etc. — have been assumed to be the infectious agents. The reason for this assumption seems to be solely the fact of the presence of these organisms in various combinations and proportions in the catarrhal secretions of the affected parts. Anxious to grasp any chance to exploit their wares, manufacturers have recommended vaccines for both preventive and curative purposes, and offer to this end stock vaccines of an all-inclusive polyvalence.

That the underlying cause of many cases of "colds" is not as assumed heretofore is indicated strongly by certain recent investigations of much interest. Tunnicliff[2] has discovered, in acute as well as more chronic forms of rhinitis, a delicate, curved, gram-negative, anaerobic bacillus (*Bacillus rhinitis*) which, as a rule, is not found in the normal nose. In a large percentage of the cases of acute rhinitis, this organism is present in practically pure form.[3] It was found to be present also in 90 per cent. of cases of chronic rhinitis with mucoid discharges. That *Bacillus rhinitis* actually has an etiologic relationship to acute rhinitis is shown, first, by the experimental production with it of rhinitis with recovery of the organism in pure culture, and, secondly, by the production in cases of acute and chronic rhinitis and in persons injected with the bacillus of specific opsonin and complement-binding antibodies.[4]

In connection with this, the work of Kruse is of interest. He diluted the secretion in acute rhinitis with fifteen times its volume of salt solution and passed the mixture through a Berkefeld filter. This filtrate was instilled into the nose of twelve persons, and four came down with snuffles in from one to three days. In a second experiment, the secretion was diluted twenty times, filtered, and inoculated into the noses of thirty-six persons, fifteen of whom came down with acute rhinitis. Kruse found the filtrate sterile, and consequently he regards the result of his experiment as due to the action of an invisible and filterable virus. It is not clear, however, that in making the cultures he used modern anaerobic methods, and the question that possibly the bacillus of rhinitis of Tunnicliff was present in the filtrate must be determined by the results of future experiments.

1. Ben Franklin's Views, Correspondence, THE JOURNAL A. M. A., this issue, p. 189.
2. Tunnicliff, Ruth: An Anaerobic Organism Associated with Acute Rhinitis, Jour. Infect. Dis., 1913, xiii, 283.
3. Tunnicliff, Ruth: Further Observations on the Bacteriology of Rhinitis, with Special Reference to an Anaerobic Organism, Jour. Infect. Dis., 1915, xvi, 493.
4. Howell, Katharine: Complement Fixation in Acute Rhinitis, Jour. Infect. Dis., 1915, xvi, 456.

At all events, the work of Tunnicliff goes far toward establishing a distinct group of "colds" in which *Bacillus rhinitis* seems to be the etiologic agent. Whether or not the work here outlined will lead to improved methods of prevention and cure remains to be learned. It should serve, however, to restrain the eagerness of manufacturers and other persons to build up methods of treatment on such flimsy foundations as illustrated by the exploitation of polyvalent vaccines for colds.

FOOD FAKES OF WAR TIMES

The hardships of war naturally make a profound and sympathetic impression on the relatives and friends of the combatants. Those who remain at home desire to send an occasional token of affection to the soldiers in the trenches and to furnish them some appetizing adjuvant to the monotonous diet that must inevitably constitute the routine nourishment under the conditions of actual warfare as it is conducted today. In Germany this human longing has given an impetus to a trade in suitable gifts or *Liebesgaben*, such as articles of wearing apparel and food products. One outcome of the business promoted by this national personal generosity has been the introduction of frauds of the most shameful character. The loving mother or devoted sweetheart has been prompted unwittingly to spend exorbitant sums for worthless or inferior supposed delicacies intended to refresh and invigorate the patient sufferers at the front.[1]

This disgraceful traffic has developed some rather unique novelties in the way of fraudulent food products. One of these is "solid alcohol," advertised as a substitute for familiar alcoholic drinks like punch. The specimens sold consist of cubes of gelatin, to which brandy and sugar have been added before the mixture has solidified. The directions are to pour hot water on these cubes, whereupon one obtains a sweetish fluid, weak in alcohol and possessing a rather disagreeable flavor of glue. The longer the cubes are kept, the greater is the tendency of the alcohol originally present to disappear by evaporation, so that the supposedly invigorating "solid brandy," never at any time a representative product, becomes weaker and weaker in alcoholic strength. In some cases the cubes have been replaced by collapsible tubes of semigelatinous mixtures containing some brandy and advertised for use in the same way with hot water. The price of 60-c.c. (2-ounce) tubes varies from 25 to 35 cents. The alcohol content has gradually been reduced by the unscrupulous manufacturers, and one firm went so far as to introduce brandy substitutes and substances of a "peppery" nature to simulate the "warmth" of a dose of brandy. Painful irritations in the mouth have been reported by soldiers on the march who were unable to wash out the fraudulent adulterant that was sent to them at high cost by affectionate friends. Equally outrageous has been the traffic in "substitutes" for the much desired alcoholic beverages — often nothing more than a cube of sugar colored red with dyes admixed with citric or tartaric acid. The concoction prepared by addition of hot water to this "present from home" is an inferior kind of artificial lemonade.

Coffee and cocoa have likewise been dispensed in tablet form of most inferior quality at exorbitant prices. One pound of a favored brand, doubtless wrapped in covers with ennobling messages to the heroes of the war, sold at the rate of three dollars (12 marks) per pound! Coffee was often replaced by chicory, diluted with sugar. It is reported that 500,000 kilograms of cacao husks found their way into the market in Hamburg alone. Tablets supposedly made of dried milk, but evidently deteriorated or else originally inferior, have been unloaded on the willing buyers who have been made innocent victims of their humane impulses.

Owing to a peculiar wording of the German laws respecting food adulteration, which insist in certain cases that adulteration involves imitation, and therefore a new or novel product like a cube of "solid alcohol" cannot represent adulteration, many prosecutions have failed. The faker is a heartless villain who knows neither integrity nor patriotism. In war as in peace, he feeds on the gullibility of his patrons.

1. Our information on these facts is derived from a communication by the Director of the Chemical Laboratory of the Department of Police in Berlin. See Juckenack, A.: Liebesgaben auf dem Lebensmittelmarkte, Vrtljschr. f. gerichtl. Med., 1915, xlix, 258.

SOME FALLACIES IN THE TREATMENT OF PHENOL (CARBOLIC ACID) POISONING

The frequency with which individual chemical substances appear in the rôle of poisons varies from era to era. There was a period when arsenic, for example, occupied a more prominent place among the lists of fatalities by poisoning than it does at the present day. Acute intoxication with phenol (carbolic acid) has of late years assumed large proportions. The substance has become a popularly known household chemical which finds a diversity of applications. It is found at the bedside of the sick, in homes, in public places, in stables and in numerous similarly scattered places which indicate how readily accessible and how recklessly distributed the poison is. The comparatively recent period in which phenol has become thus "vulgarized" is indicated by the fact that it was not discovered until 1834, and its use for antiseptic purposes dates much later. Sometimes the poisoning has been due to medical misuse, though this is not very common; frequently it has been taken by mistake; many persons have employed it with suicidal intent. Under all these circumstances the seriousness of its improper use is enhanced by the fact that phenol is readily absorbed whether it be taken into the system by mouth,

through the lungs in the form of a vapor or spray, through external application to the skin in dressings of wounds and otherwise, or even by absorption from the bowel when administered as an enema. The most significant feature of the toxic action of phenol is the rapidity with which the collapse and death may ensue.

Naturally the question of first aid and suitable antidotes is of preeminent interest in this connection. When coma and collapse have set in and reached the point at which artificial respiration becomes desirable, there is little prospect of resuscitation. Everything hinges on early procedure, particularly the removal of any unabsorbed poison, whether it be in the stomach or on the exterior surfaces. Dr. David I. Macht[1] of Baltimore has recently reviewed the current antidotal recommendations in detail before the Johns Hopkins Hospital Medical Society, devoting special attention to two drugs, alcohol and sodium sulphate, which have been used in this connection on seemingly rational grounds.

The internal use of alcohol in phenol poisoning originated, according to Macht, out of the demonstration that the destructive action of the phenol on the skin is promptly overcome by quickly rinsing it with strong alcohol.[2] A critical survey of the clinical reports, together with such experimental evidence as is available, indicates the uncertain basis on which the use of alcohol in phenol poisoning really rests. The same may be said of the treatment with sodium sulphate. Phenol is known to conjugate with sulphuric acid arising in metabolism and leave the organism in the form of an ethereal sulphate or sulphonate which appears to be comparatively harmless. Baumann and Preusse therefore suggested, years ago, that the administration of a sulphate in large quantities might act as an antidote against phenol. It is questionable, however, whether the latter combines with sulphates as such in the body. Sulphites have also been considered; but they are themselves too toxic to be taken internally.

Aside from the use of ordinary demulcents like white of egg, which has not proved of value, lime water and syrup of lime have been recommended in cases in which phenol has been swallowed, with the idea that they would form an insoluble compound in the stomach. Macht reports that they too are very unsatisfactory. According to his careful and extensive experiments on animals, death can often be averted by a thorough lavage of the stomach. In accord with the promptness of the onset of symptoms, the efficiency of lavage in phenol poisoning depends on the quantity of poison taken, on the time after poisoning that the lavage is begun, and on the solution used for washing the stomach. A strong solution of sodium sulphate appears to be most useful for this purpose, water coming next in efficiency. The favorable action of the sulphate in this connection is probably not a chemical one, but is perhaps due to some hindrance to absorption and possibly also to an induced purgation.

Macht has clearly demonstrated, contrary to the popular experience, that the internal use of alcohol in cases of phenol poisoning may be unfavorable. The conflicting opinions are reconciled, however, by his investigations. The influence of alcohol depends on the time of administration. If it is given after the ingestion of phenol, as must be the case therapeutically, the symptoms will be aggravated. The alcohol here acting as an excellent solvent for phenol, still further promotes its absorption. Death may actually be hastened. On the other hand, an animal previously intoxicated with alcohol can somehow withstand better the effects of phenol taken afterward. Macht suggests, in accord with experience, that a previously drunken person will probably withstand the ravages of phenol better, whereas one that takes phenol mixed in alcohol or victims of phenol poisoning washed or doused with alcohol for therapeutic purposes, are more liable to perish. Clinical statistics are in agreement with this view. Taken together with the newer experimental evidence, they suggest, despite the advice found in some of the prominent textbooks on toxicology, that the use of alcohol in phenol poisoning should be strongly discouraged.

1. Macht, D. I.: An Experimental Study of Lavage in Acute Carbolic Acid Poisoning, Bull. Johns Hopkins Hosp., 1915, xxvi, 98.
2. Powell, S. D.: Med. Rec., New York, 1899, lv, 372. Buchanan, J. D.: ibid., lvi, 441.

THE CHLORIN TREATMENT OF WATER SUPPLIES

The increasing use of chlorin in liquid form for the disinfection of water supplies was noted last year by THE JOURNAL.[1] Continued experience has been highly favorable to this method. It is the natural outgrowth of the use of calcium hypochlorite which, since its introduction in this country, about 1908, has had a remarkable extension. Hundreds of cities have adopted temporarily or permanently the "hypochlorite" treatment, and the amount of typhoid fever prevented by this means is certainly large. At the Fifteenth International Congress of Hygiene in 1912, foreign visitors stated that the hypochlorite method, as developed in this country, was one of the most important contributions yet made to the water supply problem.

The practical application of calcium hypochlorite, however, seems beset with difficulties. The proper adjustment of the mixing and feeding devices by which the bleaching powder solution is added to the water is one of the most serious problems. An excess of the chemical may lead to unpleasant tastes or odors, especially when the water treated contains considerable amounts of organic matter. While a bad taste is theoretically less objectionable than the continued use of a water containing live typhoid bacilli, the complaints of annoyed water consumers in several places, notably

1. Liquid Chlorin and Water Sterilization, Current Comment, THE JOURNAL A. M. A., July 25, 1914, p. 327.

in Cleveland, have led to the use of ineffective amounts of the hypochlorite. This action was taken in an attempt to avoid the criticism of angry citizens who—such is human nature—preferred to drink water that did not smell rather than water which they were assured was safe but which had a disagreeable, though faint, odor. In at least one instance, attempts to still the mutterings of dissatisfaction by reducing the amount of hypochlorite added to a water have apparently led to a disastrous typhoid epidemic.[2]

The necessity which forced many water-works superintendents to choose between ineffective sterilization and the production of a disagreeable taste is now in large part, if not entirely, obviated by the substitution of "liquid chlorin" or chlorin gas under pressure for the solution of calcium hypochlorite. The great advantage seems to be that the chlorin is added directly to the water, and the amount can be regulated simply and effectively, so that the liability of causing unpleasant tastes or odors is largely eliminated. A number of manufacturers now supply the liquefied gas in cylinders under pressure, and several devices for regulating the application of the gas have been demonstrated to be adequate. The cost of apparatus and installation is low—in one city of 12,000, for example, less than $300—and the operating cost is moderate.

Bacterially, the efficiency of the process has been abundantly demonstrated, and there is no doubt that water chlorination prevents typhoid fever. The New York State Department of Health has recently called attention to the excellent results obtained in Lockport and North Tonawanda, two small cities taking their supply from the Niagara River, which receives the raw sewage of Buffalo, a few miles above. Both cities have suffered repeatedly from typhoid fever and have at times been scourged by epidemics. Within a year, both cities have installed chlorination plants, with the result that typhoid fever within their limits has almost disappeared. Reports from other sources on the use of liquid chlorin are equally satisfactory. In Milwaukee, where the use of hypochlorite resulted in the reduction of typhoid to the lowest rate in the history of the city, there was, nevertheless, complaint of taste and odor in the winter months. The recent substitution of liquid chlorin for the hypochlorite is said to be yielding results that are hygienically just as good, while the process is at the same time more economical and more pleasing from the point of view of palatability. Buffalo is also numbered among the large cities which have recently placed in use a liquid chlorination plant. As an emergency measure and as an adjunct to filtration, the use of liquid chlorin seems to leave little to be desired on the hygienic side. It does not, however, remove turbidity or color from water, and cannot be regarded as serving all purposes of water purification.

2. Jordan, E. O.: Jour. Infect. Dis., 1913, xiii, 16.

Current Comment

LIQUID PETROLATUM AND ITS TRADE-MARKED NAMES

Recently[1] we called attention to the handicap imposed on medical progress by the multiplicity of names for the same therapeutic substance, as well as by unnecessary non-descriptive names. An illustration of the absurd extent to which the multiplication of names can go is furnished in the list of trade appellations given to liquid petrolatum since Sir W. Arbuthnot Lane advocated this product as a remedy for intestinal stasis. About a year ago we published a partial list of names, new and old, for liquid petrolatum.[2] Since then many more new ones have come to notice, among them Bakurol, Interol, Med-O-Lin, Muthol, Semprolin, Whiteruss, Nujol and Stanolax. Nujol is put up by the Standard Oil Company of New Jersey and Stanolax by the Standard Oil Company of Indiana. Probably before long each of the other Standard Oil companies will have its own name for liquid petrolatum—that is, if physicians will tolerate it. Proprietary names are coined to sustain the impression, created by advertising, that, in each case, the particular product is superior to all others; exaggerated claims would not be made for the same product under an official title. The clinical investigation conducted under the auspices of the Council on Pharmacy and Chemistry and reported on by Dr. Bastedo[3] showed that the therapeutic results from light and heavy, and from Russian and American liquid petrolatum, are indistinguishable; that the selection of a light or a heavy variety is a matter of individual preference, and that the prime consideration should be to secure a practically odorless and tasteless product. There is no excuse whatever for special brands so far as the medical profession and the public are concerned, but it is otherwise with those who supply the products: More can be charged for a product sold under a trademarked name, for thereby it is possible to make the buyer think that he is getting something better than the official liquid petrolatum. Not a few of those who put out such products under proprietary titles are simply placing their names on liquid petrolatum bought from one of the Standard Oil companies or from some other oil-producing or oil-refining concern. If one prefers the product sold by a particular firm—as Hynson, Westcott & Co., E. R. Squibb & Sons, or any other—let the prescription read, accordingly, Liquid Petrolatum, H., W. & Co., Liquid Petrolatum, Squibb, etc. Liquid Petrolatum U. S. P. should be, and probably is, as pure a product as any on the

1. The Nomenclature of Drugs, editorial, THE JOURNAL A. M. A., May 29, 1915, p. 1853.

2. Liquid Petrolatum or "Russian Mineral Oil," Report Council Pharm. and Chem., THE JOURNAL A. M. A., May 30, 1914, p. 1740. Adepsine Oil, Amalic, Atoleine, Atolin, Blandine, Crysmalin, Decline, Glyco, Glycolin, Glymol, Heavy petroleum oil, Liquid Albolene, Liquid Petrolatum, Liquid Saxoline, Mineral Glycerin, Mineral Oil, Neutralol, Olo, Paraffin Oil, Paroline, Petralol, Petro, Petrolax, Petrolia, Petronol, Petrosio, Rock Oil, Russian Liquid Petrolatum, Russian Mineral Oil, Russian paraffin oil, Russol, Saxol, Terraline, Terralbolia, Usoline, Water-white mineral oil, White liquid vaseline, White paraffin oil.

3. Bastedo, W. A.: Clinical Experience with Liquid Paraffin (Liquid Petrolatum), THE JOURNAL A. M. A., March 6, 1915, p. 808.

market. If a given pharmacist does not keep it or if the product he keeps is not practically odorless and tasteless, then physicians should insist that he get a product that conforms to these requirements — or patronize a pharmacist who will do this.

THE PRACTICAL DISINFECTION OF SWIMMING POOLS

The danger of the transmission of disease in swimming pools is becoming realized more prominently with the growing popularity of these institutions.[1] The management of public baths in such a way as to guarantee a satisfactory degree of sanitary safety has raised a series of questions involving construction, equipment, water source and supply and personal hygiene. Calcium hypochlorite has been highly recommended for disinfecting, and has been adopted for many pools. Its potential efficiency as a disinfectant for the water is not doubted. The use of the hypochlorite, however, is frequently accompanied by complaints regarding the disagreeable odor attending it. This fact has led to much experimentation in search of an equally efficient and inoffensive substitute. The difficulties here referred to are decidedly greater in connection with swimming pools than with public water supplies. For the treatment of the latter, more than two parts per million of hypochlorite are seldom necessary. Even with this small proportion, aeration of the drinking water is necessary to overcome the objectionable taste and odor. In the case of the swimming pool, this feature is aggravated by the fact that, according to trustworthy bacteriologists, three parts of the hypochlorite per million are necessary to sterilize the water. Aeration in such cases merely serves to release the odor from the water into the enclosed room surrounding the pool. In tests conducted recently at the Taylor Gymnasium pool at Lehigh University, South Bethlehem, Pa., S. T. Thomas[2] has obtained encouraging results by the employment of copper sulphate in place of calcium hypochlorite. The possibilities of the application of copper sulphate as an algicide and disinfectant in polluted water are not new.[3] The results recorded by Thomas are sufficiently promising to deserve further consideration by hygienists. He has summarized what he regards as the advantages of copper sulphate over calcium hypochlorite as a disinfectant for swimming pools as follows: It is more effective because it does not undergo chemical change readily. Hypochlorite owes its power to the chemical reactions involved in liberating chlorin, whereby it is converted into a useless product. Copper sulphate is not irritating to the eyes and mucous membranes, as the hypochlorite may be when used in germicidal quantities. It is cheaper and has no odor. If all other conditions were equal, the last fact alone would prove to be a great advantage.

1. The Sanitation of Swimming Pools, editorial, THE JOURNAL A. M. A., April 24, 1915, p. 1427.
2. Thomas, S. T.: The Use of Copper Sulphate in the Purification of Swimming Pools, Jour. Indust. and Eng. Chem., 1915, vii, 496.
3. Moore, G. T., and Kellerman, K. F.: A Method of Destroying or Preventing the Growth of Algae and Certain Pathogenic Bacteria in Water Supplies, Bull. 64, U. S. Dept. Agric., Bur. Plant Industry, 1904; Copper as an Algicide and Disinfectant in Water Supplies, Bull. 76, 1905.

DETROIT IN 1916

As was noted in the minutes published last week, the place for the 1916 session of the Association is Detroit, Michigan. Judging from the telegrams and letters accompanying the invitation received from that city, the Association may look for a hearty welcome and a most enjoyable time. It was announced semi-officially that no one would have to walk while in Detroit, and that every one would be presented with a Ford car as a watch charm. However this may be, Detroit is a central point, easily accessible to the whole country, and the attendance will be large.

SAN FRANCISCO SESSION

The reports of the proceedings of the Annual Session of the Association, held at San Francisco, which appeared in THE JOURNAL last week, are gratifying evidence of the work being done by the organization. The attendance was fully as large as the most optimistic expected. The number who registered from the Pacific Coast States proved the interest of the profession in that territory. The minutes of the House of Delegates show the efforts of the Association in advancing the usefulness of the profession in serving the public. The exhaustive study of the relations which physicians must meet in the sociologic conditions which prevail, especially in the development of workmen's compensation legislation, as they are presented in that portion of the report of the Judicial Council devoted to this subject, merits special attention. The action of the House in directing that this subject be brought to the notice of the different branches of the organization shows the policy of the Association: that the medical profession shall seek to advance the betterment of conditions under which the people live and labor. This is but one evidence of the earnest thought which is being given to the problems which come before the House of Delegates. The number of important measures which were considered and wisely determined can be appreciated only by a careful reading of the records. The work of the Scientific Assembly — the sections — was good. The programs were excellent, most of the meetings were fairly well attended, and interest was manifested in the papers presented and discussed. The Scientific Exhibit, as always, commanded the interest of the Fellows; not only the excellence of the work displayed but also its practical value to the profession and the clear demonstrations made by those who contributed were frequently commended. The Commercial Exhibit was most creditable and fully deserved the interest manifested by those who visited the booths of the exhibitors. The social events were well planned and carried out. Especially were the excursions enjoyed by those who were able to take advantage of them. The success of Commemoration Day has already been noted. The exposition did not detract from the interest in the work of the Association as might have been expected, but was always available whenever leisure time permitted the Fellows or their ladies to visit it. The members of the local

profession exerted themselves with true California hospitality to provide for the comfort and pleasure of the visitors and are to be congratulated on their conduct of the convention. The San Francisco Session was a great success.

ELECTRIC LIGHT AS A "PATENT MEDICINE"

Many and varied are the ways of publicity. Yet, it has apparently remained for a medical book publisher to utilize the public service corporations as a cheap and easy method of advertising his wares. The Medico Press is the name of a Chicago publishing concern which puts out a book on "Beauty and Motherhood." This book, it seems, devotes no small amount of space to the self-treatment of disease by means of light. "Use Electric Light Instead of Medicine," says a leaflet. "The ordinary electric light of the home, if used properly, can cure many diseases, acute and chronic, and relieve pain promptly." Electric light, besides being "very effective," is also warranted to "never harm." Treatment by electric light, it appears, has been simplified to a degree achieved in the past only by the "patent medicine" fraternity. "No skill or experience is required. Just follow the simple directions given in 'Beauty and Motherhood.'" Thus runs a leaflet sent out by the Medico Press, which has solved the problem of bringing to public attention the virtues of phototherapy. The publishers of "Beauty and Motherhood" write, to those public service corporations which furnish electric light, to the effect that they can show these corporations how they "may increase the sale of electricity 33⅓ per cent. or more — without cost to you — by opening a new, large field for the consumption of electric current." With the letter is enclosed the leaflet already described. Following up the argument in true "patent medicine" style, the letter from the Medico Press continues:

> "With the people's interest in light treatments aroused a new, vast field for the use of electricity is opened with unlimited possibilities for you. Thus, Mrs. A. J. . . . ., of Chicago, after reading 'Beauty and Motherhood,' procured a 250-candle-power bulb, and is using it ever since. Her light bills average DOUBLE the former figures. Besides, she is recommending the light enthusiastically to friends and neighbors.
>
> "This is but one of the many instances in which 'Beauty and Motherhood' either doubled or tripled the light bill of old customers, or forced Electric Light into new houses."

Still further unfolding the scheme by which the electric light companies can notify their customers of the existence of this new cure-all, the letter continues: "The Point is to Get This Book 'Beauty and Motherhood' into the Homes of Your City." To do this the Medico Press is willing to furnish advertising leaflets, which may be included with the "next outgoing monthly bills." Query: How many electric light companies will swallow the bait?

Scientific Information Bureau for Italy.—Italy has now joined France and Germany in providing an information bureau for all kinds of scientific data, even including bibliographic references. It is operated in connection with the public library at Milan, via Ugo Foscolo 5.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

New Free Dispensary.—Work on the university free dispensary building, Birmingham, which is to cost $50,000, has commenced and the building will be completed in October.

Site Offered for Blind School.—Dupont Thompson of Birmingham has offered a tract of land near Hale Springs, as a site for the proposed State School for Manual Training for the Blind, which the legislature has been called on to construct and endow. The site offered is about 8 miles from Birmingham.

Medical Journal Headquarters Changed.—The *Southern Medical Journal*, the official organ of the Southern Medical Association, heretofore published at Mobile, will in the future be published in Birmingham, the headquarters of the association and Dr. Seale Harris, editor of the journal, will also move to Birmingham.

Mental Hygiene Society Organized.—The Alabama Society for Mental Hygiene was organized at the Alabama State Hospital, Tuscaloosa, June 21, and the following permanent officers were elected: president, Dr. John W. Abercrombie; vice presidents, Mrs. S. B. Locey, and Prof. Charles A. Brown; secretary, Mrs. R. D. Thompson, Birmingham, and treasurer, Dr. William D. Partlow, Tuscaloosa.

Mobile Alumni Hold Meeting.—At the annual meeting of the School of Medicine of the University of Alabama, Mobile, June 8, the following officers were elected: president, Dr. Marion J. Bancroft, Mobile; vice presidents, Drs. Lamartine O. Hicks, Jackson, and J. A. Ussery, Roanoke; secretary, Dr. Percy J. Howard, Mobile (reelected), and orator, Dr. E. W. Cawthorn, Mobile. The annual oration was delivered by R. C. Macy, Bayou la Batre.

Personal.—Dr. William F. R. Phillips has resigned the professorship of anatomy in University of Alabama, Mobile, and has accepted the same chair in the Medical College of the State of South Carolina, Charleston.——Dr. W. Earle Drennen, Birmingham, has been designated to take charge of the war hospital of Mrs. Harry Payne Whitney at Juilly, France, to succeed Dr. Brewer, New York City. Dr. and Mrs. Drennen sail for France, July 10.——Dr. Russell A. Smith, Brewton, has been appointed medical member of the state board of convict inspectors, succeeding Dr. James M. Austin, Wetumpka, and Dr. Austin has been made resident physician at the Wetumpka Penitentiary, succeeding Dr. James T. Fowler.——Dr. Nimrod T. Underwood, Russellville, is under treatment at the South Highland Infirmary, Birmingham.——At the twentieth annual meeting of the Association of Surgeons of the Southern Railway, held at Asheville, June 2 to 4, the committee awarded the first prize to Dr. W. Earle Drennen, Birmingham, for his paper on "Compound Infected Fractures."——Dr. Percy I. Price, Florence, has been appointed physician to the state convict camp employed at the Thorley-Phillips Stove Works, Florence.

ARIZONA

New State Officers.—At the annual meeting of the Arizona State Medical Association, held at Prescott, the following officers were elected: president, Dr. Roy E. Thomas, Phoenix; vice presidents, Drs. Harry T. Southworth, Prescott; James E. Drane, Jr., Mesa, and Albert W. Waneman, Douglas; secretary, Dr. Clarence E. Yount, Prescott (reelected); delegate to the American Medical Association, Dr. Hiram W. Fenner, Tucson; alternate, Dr. Willard Smith, Phoenix; councilor for the middle district, Dr. E. Payne Palmer, Phoenix, and for the northern district, Dr. William H. Bucher, Kingman. Phoenix was selected as the place of meeting for 1916.

CALIFORNIA

Personal.—Dr. Walter C. Chidester, San Mateo, has returned after two months in French military hospitals.——Dr. B. M. Lawrence, Los Angeles, who has been under treatment in a hospital in Los Angeles for some time, on account of an accident, is reported to be convalescent and has been taken to the home of her daughter.

Ordinance for the Employment of Municipal Visiting Tuberculosis Nurses.—An ordinance drawn up by Dr. George E. Malsbary was approved by the voters of Los Angeles at the city election, June 1, by a vote of 49,359 to 25,681. The ordinance provides for the employment of visiting tuberculosis nurses by the health commissioner in the proportion of one nurse to each one hundred cases of reported tuberculosis in the city; that these nurses shall be paid the same salary as that provided for municipal nurses; that these nurses shall visit professionally all reported cases of tuberculosis unless requested by writing not to do so; that the health commissioner be empowered to establish such supply stations as may be deemed necessary for the professional use of tuberculosis nurses; that the purchasing agent be directed to purchase all requisitions of the health commissioner, such supplies as may be deemed necessary for the professional use of tuberculosis nurses; and that the health commissioner shall divide the city into appropriate sections or districts, assigning one or more nurses to each district formed according to the number of tuberculosis cases therein.

University of California Notes.—Governor Hiram W. Johnson has declined to approve the antivivisection bill which was passed by the California Legislature at its last session. The committee on medical instruction of the regents of the University of California, the deans of the California and Stanford medical schools the biologic and agricultural investigators, the medical profession, and many other citizens had protested against the measure as an unwarrantable interference with science. In declining to approve the bill Governor Johnson announced that its provision that any humane officer should be permitted to invade any scientific laboratory without a search warrant was an unconstitutional interference with personal liberty and the rights of privacy. ——Work has begun on the new University Hospital, San Francisco. This teaching hospital, which is to be under the exclusive control of the University of California Medical School, is being built through the gift of $615,000 to the University of California by a group of a large number of different donors.——The University of California has accepted an offer of the Children's Hospital of San Francisco whereby the hospital remains independent financially and administratively, but whereby all of its resources become available for the educational purposes of the University of California Medical School.——Hahnemann Medical College of San Francisco has offered to convey all its property to the University of California, and has proposed to cease separate instruction. Instead two professorships are to be maintained in the University of California Medical School, in homeopathic materia medica and in homeopathic therapeutics, as elective studies, the financial provision therefor to be made, for the next two years, by the homeopaths. In all other respects students wishing eventually to become homeopathic practitioners will receive exactly the same instruction in the University of California Medical School as all of its other students.

DISTRICT OF COLUMBIA

New Hospital Finished.—The new Emergency Hospital and Central Dispensary, Washington, on New York Avenue, is completed and ready for occupancy. The building is nine stories in height and has a roof garden. The first floor of the new building is devoted to the emergency, dispensary and administration departments, the second and third floors contain open wards; the fourth to the seventh floors, inclusive, consist of private-room floors; the eighth floor is occupied by operating, anesthetic, Roentgen ray and laboratory rooms, and the ninth floor is devoted entirely to the culinary department of the institution.

Personal.—Medical Director Frank Anderson, U. S. N., was elected president, and Col. Charles Richard, M. C., U. S. A., vice president of the Washington Alumni Association of the College of the City of New York, at its meeting in Washington, June 25.——Dr. Joseph M. Heller, Washington, who has been seriously ill at the Union Protestant Infirmary in Baltimore, has returned home convalescent.——Dr. Ethan Flagg Butler, Washington, has started from Saloniki on his return to the United States.——Fred A. Fenning and Walter B. Guy have been appointed by the district commissioners, members of the board of medical supervisors of the district, succeeding B. F. Leighton and L. Cabell Williamson, resigned.——Dr. Roy D. Adams has been appointed a member of the regular Board of Medical Examiners of the District, succeeding Dr. George C. Ober, resigned.

IDAHO

Personal.—Dr. Charles A. Dettman, Burke, has been elected secretary of the Idaho State Board of Medical Examiners. ——Asst. Surg. Liston Paine, U. S. P. H. S., addressed the Cache Valley Medical Association at Preston, June 22, reviewing the work being done in Idaho and Montana by the United States Public Health Service for the extermination of Rocky Mountain spotted fever. The lecture was illustrated with pictures of spotted fever patients and specimens showing the causative factor, the wood tick, in its various stages of development.

ILLINOIS

Prize Awarded Open-Air School.—Trustees of the Elizabeth McCormick Memorial Fund have been notified that their open-air school exhibit at the Panama-Pacific Exposition has been awarded the grand prize for school hygiene, a medal of honor and a gold badge in education.

Personal.—Dr. John K. Reticker has been added to the staff of Blessing Hospital, Quincy.——Dr. Royal L. Eddington, Lacon, was operated on recently for appendicitis at the Proctor Hospital, Peoria, and is reported to be doing well.——Dr. Franklin J. Drake, president of Lombard College, Galesburg, has resigned and will reenter the practice of medicine.——Dr. John Dill Robertson, Chicago, has been appointed a member of the board of trustees of the Chicago Municipal Tuberculosis Sanatorium, succeeding Dr. George B. Young.

Chicago

Daily News Sanatorium Open.—The *Daily News* Fresh Air Fund Sanatorium in Lincoln Park, Chicago, opened for its twenty-ninth annual season on June 28.

Baby Saving Week.—Mayor Thompson has issued a proclamation that the week of July 17 to 24 is to be Baby Welfare Week. He urges on the citizens of Chicago the importance of the undertaking and asks that all civic and philanthropic organizations lend their aid and cooperation.

Cooperation of Health, Police and Street Departments.—A plan is being worked out between the health, police and street departments whereby the patrolmen of the police department will assist the health department in keeping the city clean and improving sanitary conditions generally. It is intended that the police officers shall keep watch on the sanitary condition of streets, alleys and back yards on their respective beats, and shall pay special attention to manure piles and the manner of keeping garbage. Derelict householders will be notified and if improvement is not made, reports will be made to the department. It is expected that the fly nuisance will be kept at the lowest possible point by this means and that there will be improvement in sanitation generally. At present the inspectors of the health department are kept busy investigating complaints and have no time to make systematic surveys of any given section of the city.

INDIANA

Mission for Sick Children Opened.—The Summer Mission for Sick Children, Indianapolis, was opened July 1 for the season of 1915.

Sanitary Survey Commenced.—A sanitary survey of Logansport was commenced by J. C. Diggs, state chemist, and four assistants, on June 21.

Flood Prevention Plans.—At a meeting of the Fort Wayne Medical Society, June 15, the organization went on record as favoring the proposed flood prevention methods and appointed a committee consisting of Henry O. Bruggeman, John H. Gilpin and Hermann A. Duemling to draft resolutions embodying the society's endorsement.

Personal.—Dr. Charles W. Fry has been appointed president of the Huntington Board of Health, vice Dr. William F. Smith, resigned.——Dr. Fred L. Bunch, Muncie, has been appointed division physician of the Logansport Division of the Pennsylvania system.——The office of Dr. Henry E. Steinman, Monroeville, was destroyed by fire, June 17.

University Notes.—Two additional full-time teachers have been added to the faculty of the medical department of the State University. B. D. Turner, B.S., Ph.D., becomes associate professor and head of the department of pharmacology and Dr. Eugenio Fernandez of the University of Chicago becomes associate in pathology. Dr. Boessinger remains in the department as instructor.——Dr. Paul Bowers of the Stae Hospital for the Criminal Insane received the degree of M.D. *cum laude* at the graduating exercises of the University; the subject of his thesis was "Insanity and Crime."

IOWA

Valley Physicians Hold Meeting.—The forty-fourth annual meeting of the Des Moines Valley Medical Association was held in Ottumwa, June 17, and the following officers were elected: president, Dr. Moses Childress, Oskaloosa; vice presidents, Drs. Martin F. Moore, Martinsburg, and James S. Gaumer, Fairfield; and secretary, Dr. Elias B. Howell, Ottumwa (reelected).

Hospital News.—The Woodbury County Hospital for Tuberculosis at Sioux City, erected at a cost of about $15,000, is nearing completion.——A special election has been set for September 9, at which Delaware County will vote on the question of raising a one-half mill tax to be applied on the erection of a county hospital to cost $50,000.—At a conference between the representatives of the Des Moines Chamber of Commerce, The United Mine Workers of America, and J. M. Griffin, Albia, the establishment in Des Moines of a hospital to be the headquarters of practically all of the 13,000 coal miners of Iowa, was assured.

MAINE

New Board Members.—The governor recently appointed Dr. Adam P. Leighton, Jr., Portland, and Eugene H. Andrews, Brunswick, members of the Board of Registration in Medicine, succeeding Dr. George H. Emerson, Bucksport, and John L. M. Willis, Eliot, whose terms of office expired July 1.

Rename Medical School.—The trustees and overseers of Bowdoin College, on June 24, voted that the Medical College of Maine, the medical department of Bowdoin College as it has been known since its establishment in 1820, will in the future bear the name of Bowdoin Medical School. In all future commencements, a medical graduate will be selected as one of the five commencement day orators.

Personal.—Dr. Carl M. Robinson, Portland, has been appointed superintendent of the Edward Mason Dispensary, Portland, succeeding Dr. Millard C. Webber, resigned.——Dr. Karl B. Sturgis, second assistant physician at the Augusta State Hospital, has resigned and will practice in Augusta. Dr. Arthur C. Wright, Gardiner, has been named second assistant physician and Dr. Harry Bass, Plymouth, Mass., third assistant physician.

MARYLAND

Personal.—Dr. Howard A. Kelly has left for Toronto, where he will remain until September 1.——Dr. Francis P. Carroll, formerly of the surgical staff of St. Agnes' Hospital, has left Baltimore to take up his new work as resident physician and surgeon of the Bridgeport Hospital, Bridgeport, Conn.——Dr. J. A. Campbell Colston, Baltimore, has been promoted to senior surgeon of the Red Cross unit at Pau, France, succeeding Dr. E. Kirby Smith, who resigned to go to Serbia to aid in the work of the extermination of typhus fever.——Dr. John C. Hemmeter, Baltimore, who has been ill with appendicitis, is reported to be improving.

MINNESOTA

Medical Corps in Charge of Emergency Hospital.—The Emergency Hospital at Minnesota State Fair, September 6 to 11, is to be placed in charge of the sanitary committee, First Field Artillery, Minn. N. G., of which Maj. Willmar C. Rutherford, St. Paul, is in command.

Campaign for Public Health.—A campaign to obtain members for the Minnesota Public Health Association was inaugurated June 22 by the executive secretary, Ignatius J. Murphy, Duluth. Application blanks for membership have been sent all over the state and it is proposed to form county public health associations and to scatter broadcast, public health letters and bulletins of information to aid in the fight against tuberculosis.

Sanatorium Notes.—The counties of Crow Wing and Aitkin have decided to unite in the establishment and maintenance of a county sanatorium for tuberculosis. The counties have also united on the proposition of levying a one mill tax. Thus a fund of about $26,000 will be raised which will be sufficient for the construction of the sanatorium, which is to be located near Cedar Lake station.——The county commissioners of Grant County have withdrawn from the proposition for the establishment of the joint tuberculosis sanatorium for Douglas, Grant, Polk and Stevens counties.——Blue Earth County has declined to be one of the eight counties to build a joint tuberculosis sanatorium at Mankato.——Bids have been asked for the construction of a tuberculosis sanatorium for the counties of Polk and Norman.

Personal.—Dr. Burton J. Merrill, Stillwater, has been appointed prison physician, succeeding Dr. W. H. Pratt.——Dr. John C. Staley, St. Paul, who has been attached to the American Ambulance Hospital, Paris, has returned to the United States.——The Minneapolis City Council, June 11, declared vacant the office of health commissioner held by Charles E. Dutton, and Dr. Harry M. Guilford was named as temporary head of the department.——Dr. Norman W. Chance was taken ill at his summer cottage at Little Falls, June 5, and brought to St. Gabriel's Hospital, Little Falls, for treatment.——Dr. Charles H. Pelton has been appointed assistant superintendent of the St. Paul City Hospital.——Dr. and Mrs. Charles M. Long, Osakis, have returned after a three months' tour of California.——Dr. Frederick A. Smartwood, Waseca, is taking a trip to the Pacific Coast.

Faculty Notes.—Dr. George D. Head, assistant professor of medicine; Drs. Peder A. Hoff, St. Paul, and Alexander R. Hall, St. Paul, instructors in medicine; Dr. James S. Gilfillan, St. Paul, assistant professor of medicine; Dr. John L. Rothrock, St. Paul, assistant professor of gynecology; Dr. Charles D. Freeman, St. Paul, instructor in dermatology and genito-urinary diseases, and Dr. Frederick E. Haynes, Minneapolis, instructor in the department of medicine, have resigned from the faculty of the University of Minnesota Medical School.——The vacancy created by the resignation of Dr. Charles L. Greene, St. Paul, head of the department of medicine in the Medical College of the University of Minnesota, has been provided for temporarily by the appointment of a committee composed of Drs. S. Marx White, Minneapolis, associate professor of medicine; Arthur S. Hamilton, Minneapolis, associate professor of nervous and mental diseases, and Julius P. Sedgwick, Minneapolis, associate professor of pediatrics, temporarily to administer the affairs of the department.

Hospital Notes.—Bids for a frame hospital to be constructed on the Fond du Lac Indian Agency Farm, west of Cloquet, will be opened in Washington July 17. The cost of the building is to be $19,500 exclusive of fixtures and plumbing. The building will have accommodations for twenty patients and will care for Indians from the various reservations of Northern Minnesota.——The Thomas Feigh Children's Hospital, Duluth, will be opened early this month. The hospital, designed to care for crippled and tuberculous children, was made possible by a donation of $35,000 by Mr. Feigh two years ago. The site for the hospital at Eighth Avenue East and Eighteenth Street, comprising 11 acres, was donated by Bishop McGolrick. Dr. Joseph R. Kuth, Duluth, will be chief surgeon of the institution. The building is of brick construction, three stories in height and will accommodate thirty patients.——Bids for the Franciscan Sisters' hospital, Little Falls, were opened June 26. The building is to be 50 by 124 feet, fireproof, and three stories and basement in height.——The Union Hospital, New Ulm, built by the Union Hospital Association, was recently dedicated. The building is 44 by 96 feet, of stone and brick construction, three stories in height and with equipment will have cost $70,000.

NEW JERSEY

For New Hospital.—On June 30 an elaborate benefit was given at Union Lake Park for the new hospital for Millville and Vineland.

State Department of Health Meeting.—The members of the State Department of Health, as it is constituted beginning July 1, held their first meeting at the State House, Trenton, June 18, and discussed the plan of organization. No decision as to the choice of director was made until after the first July meeting. The medical members of the board are Drs. Edward A. Ayers, Branchville; J. Oliver McDonald, Trenton, and Henry Spence, Jersey City.

New State Society Officers.—The one hundred and forty-ninth annual meeting of the Medical Society of New Jersey was held at Spring Lake, June 22 to 24, under the presidency of Dr. Frank D. Gray, Jersey City. Dr. Stewart Paton, Princeton, delivered an oration on "Medicine's Greatest Contributions to Humanity," and the following officers were elected: president, Dr. William J. Chandler, South Orange; vice presidents, Drs. Philipe Marvel, Atlantic City; William G. Schauffler, Lakewood, and Thomas W. Harvey, Orange; recording secretary, Dr. Thomas N. Gray, East Orange (reelected); corresponding secretary, Dr. Harry A. Stout, Wenonah (reelected); and treasurer, Dr. Archibald Mercer, Newark (reelected).

NEW YORK

Personal.—Dr. Barton McCosh Cookingham, Red Hook, returned June 18, after five months service with the Serbian Red Cross.

Antituberculosis Camp Opened.—The Olean Tuberculosis Society opened its open air camp on the Bullis farm, June 28. The camp will accommodate twenty patients.

Hospital Appropriation Increased.—The supervisors of Cattaraugus County have increased the appropriation for the County Tuberculosis Hospital from $18,000 to $30,000. The hospital, which will accommodate forty patients, will be ready for occupancy in the fall.

New York City

Personal.—Dr. and Mrs. T. R. Turnure have returned from Europe, and Dr. Elizabeth J. Van Slyke has sailed for Europe.——Dr. W. J. Maloney, who has been serving as a surgeons with the Dardanelles expeditionary force, is in a hospital in Alexandria, Egypt, as the result of a gunshot wound of the wrist and injury to his right leg.——Dr. H. Sheridan Baketel has been elected head of the Department of Hygiene and Public Health in Long Island College Hospital.

Rockefeller Institute Appointments.—The board of scientific directors of the Rockefeller Institute for Medical Research announces the following appointments and promotions: Dr. James B. Murphy, hitherto an associate in the department of pathology and bacteriology, has been made an associate member. The following have been made associates: Dr. Carrol G. Bull, pathology and bacteriology; Dr. Frederick S. Jones, pathology and bacteriology; Dr. Clarence J. West, chemistry; Dr. Michael Heidelberger, chemistry; Dr. Frederick M. Allen, medicine; Dr. Oswald T. Avery, bacteriology; Miss Angelia M. Courtney, chemistry; Dr. Eduard Uhlenhuth, experimental biology. The following have been made assistants: Dr. Harold K. Faber, pathology and bacteriology; Mr. Chester H. Allen, chemistry; Mr. James K. Senior, chemistry; Mr. Glenn E. Cullen, chemistry; Miss Mariam Vinograd, chemistry. The following new appointments are announced: Dr. R. Werner Marchand, assistant in the department of animal pathology; Dr. Carl Ten Broeck, associate in the department of animal pathology; Dr. Herbert D. Taylor, assistant in pathology and bacteriology; Dr. Oswald H. Robertson, assistant in pathology and bacteriology; Mr. Ernest A. Wildman, fellow in chemistry; Dr. Reginald Fitz, assistant in medicine and assistant resident physician, and Dr. Arthur L. Meyer, assistant in physiology and pharmacology.

NORTH CAROLINA

Sanatorium Charter Amended.—The secretary of the state announces the amendment of the charter incorporating the Pittman Sanatorium, Tarboro, so as to provide for the capitalization of $50,000. It is stated that a new building to cost $15,000 will shortly be added. (Way)

Personal.—Dr. Roswell E. Flack, Spray, formerly associated with Dr. Karl Von Ruck, Asheville, and recently health officer of Spray, N. C., will spend the summer in the laboratory of Dr. William H. Welch, Baltimore, and will then assume the duties of professor of pathology and bacteriology in the Wake Forest College, vice Dr. Herbert D. Taylor, resigned to accept service with the Rockefeller Institute, New York City.——Col. S. Westray Battle, Asheville, for several years surgeon-general of the National Guard of the state, has been retired with the rank of brigadier-general. ——Dr. Hugh W. McCaie has been elected city physician of High Point, vice Dr. David A. Stanton, resigned.

Reorganization of Bureau.—The State Hookworm Bureau terminated with that of the Rockefeller Commission, May 1, 1915, and was reorganized as the Bureau of Rural Sanitation, which bureau purposes actively to continue a portion of the work formerly performed, in addition to making local county health work the unit basis of all health work. Resolutions were adopted expressing the state's appreciation of the assistance of the Rockefeller Sanitary Commission. Dr. Fletcher R. Harris, Henderson, was elected to fill the unexpired term caused by the resignation of Dr. Alfred A. Kent, Lenoir, to accept a seat in the state legislature. Dr. Watson S. Rankin, Raleigh, was unanimously elected to succeed himself as secretary-treasurer for a term of six years. A contract was let for the immediate erection of the new building at the State Sanitarium for Tuberculosis.

Lists of Licensed Practitioners.—The Medical Society of the State of North Carolina at its recent session authorized its secretary to cooperate with the collectors of internal revenue in the furnishing of corrected lists of licensed practitioners of medicine in the state to the federal authorities. The legislature of the state recently authorized the attorney general to prosecute illegal practitioners of medicine on the advisement of the Board of Medical Examiners. Still more recently, June 15, 1915, the collectors announce under a recent federal treasury ruling that all physicians, when applying for their July 1, 1915, renewal of their permits to dispense narcotics under the Harrison Narcotic Law, must make affidavit they are legal practitioners. With this combination of fortuitous circumstances, apparently, the possibilities of anyone continuing to practice medicine illegally in North Carolina are decidedly small if the officials charged with these various responsibilities merely perform their duty.

OHIO

Sanatorium Notes.—Bamford Hills Camp, maintained by the antituberculosis workers of Cincinnati on the Little Miami River, is opened for the season and has about fifty anemic children in residence at present.——The contract for the new Butler County Tuberculosis Hospital has been awarded for $2,029.50.

Resolutions Regarding Dr. Stevenson.—The Ohio State Commission for the Blind, Columbus, at a recent meeting, by resolution, showed its appreciation of the late Dr. Mark D. Stevenson, Akron, a member of the first group of ophthalmologists to serve the state as a member of the advisory committee to assist in the campaign for preventing blindness, and paid tribute to Dr. Stevenson's unselfishness and brilliant success in his profession and extended to his family the sincere sympathy of the commission on account of his untimely death.

Personal.—Dr. Robert C. Longfellow, Toledo, announces that during his visit to the West, Hawaii, China and Japan, between July 8 to October 10, inclusive, the Toledo clinical laboratories will be closed.——Dr. John M. Adams, Cincinnati, has been elected medical director of the forty-ninth annual encampment of the department of Ohio, G. A. R.——Dr. Francis Dowling, Cincinnati, has been given the decoration of the legion of honor by the president of the French Republic on account of valuable contributions to French medical literature.——Dr. Edgar C. Steinharter has been appointed junior surgeon in the department of gynecology of the Cincinnati General Hospital.——Dr. Roland E. Skeel, Cleveland, had conferred on him by the University of Michigan, June 24, the honorary degree of Master of Arts. ——Dr. Louis L. Syman, Springfield, superintendent of the medical department of the Detroit, Toledo and Ironton Railway, who was operated on at the City Hospital for appendicitis, June 11, has returned home convalescent.——Dr. Morton W. Bland, Bellevue, state registrar of vital statistics, is reported to be seriously ill in Grant Hospital, Columbus.——Dr. John V. Gallagher has been appointed chief of staff of the new St. John's Hospital, Cleveland. Dr. Gallagher also had conferred on him the honorary degree of LL.D. by Niagara University, Buffalo, June 15.

PENNSYLVANIA

Baby Clinics Resumed.—The baby clinics at Allentown, which were a feature of the Social Service work at the River Front Park last year, are to be conducted again, and opened July 1.

Summer Course in Anatomy.—The department of anatomy, University of Pittsburgh, will give six courses in anatomy as follows: Gross anatomy, cytology, histology, splanchnology, homatology, embryology, neurology and also anatomy of the eye, ear, nose and throat. The course will extend from July 5 to August 28, inclusive.

Memorial Laboratory.—A four-story memorial laboratory, to be operated in connection with the Allegheny Hospital is being built at Sandusky Street and Park Way, Pittsburgh, as a memorial to the late Dr. William H. Singer, by his three children. The construction, equipment and endowment for maintenance amounts to $385,000. The first floor will be equipped for the development and production of medical photography; the second, museum, library and clinical necropsy, the third for studies in pathology, bacteriology and immunity, and the fourth for porters and employees. Dr. G. R. Lacy has been secured as bacteriologist.

Personal.—Dr. William J. Hanlon, Mt. Carmel, is reported to be critically ill in the Medico-Chirurgical Hospital, Philadelphia.——Dr. William W. Jenkins, Olyphant, was seriously

injured in a collision between his motorcycle and a railway train near Archbald, June 21.——Dr. Samuel P. Heilman of Lebanon has been elected a trustee of Franklin and Marshall College.——Dr. Robert Kilduffe, Jr., has been elected director of the pathologic department of the Chester Hospital.——Drs. Theodore B. Appel and John L. Atlee, Lancaster, were given the honorary degree of Sc.D. by Franklin and Marshall College, at its recent commencement.——Dr. Samuel A. Silk, for two and a half years a member of the staff of the State Sanitorium at Mount Alto, has resigned and will parctice in Sharon.——Dr. Walter H. Brown, formerly of Richlandtown, has been appointed district health inspector of Essex District, Mass.

Philadelphia

Personal.—Dr. Ella B. Everett has recently been appointed president of Wilson College, Chambersburg.

Nurses' Home Opened.—The new home for nurses of the Germantown Hospital, the gift of Mrs. William G. Warden, as a memorial to her husband was formerly opened June 29. The new building contains sixty single bedrooms for nurses and is opposite the main hospital building. It is constructed of red brick with terra cotta trimmings.

SOUTH CAROLINA

Pellagra Colony.—Spartanburg County, S. C., has appropriated $4,000 for maintenance of a pellagra colony which opened June 1 at the county home.

State Sanatorium Opened.—The tuberculosis committee of the South Carolina State Board of Health announces the opening at State Park, eight miles from Columbia, of the State Sanatorium for the Treatment of Incipient Tuberculosis, and the custody of two patients from each congressional district and two additional from the state at large are invited. Application blanks for admission of patients are to be had of Dr. Ernest Cooper, Supt., Columbia, S. C.

Personal.—Dr. John R. Martin, biochemist at the Pellagra Hospital of the United States Public Health Service, Spartanburg, has declined the permanent position of biochemist at the institution and has returned to New York City.——Dr. James Woods Babcock, Columbia, has been elected professor of psychiatry in the Medical College of the State of South Carolina, Charleston, and Dr. John L. Dawson has resigned as professor of the principles and practice of medicine and has been elected emeritus professor of medicine.——Capt. Alexander Moultrea Brailsford, M.C., S.C.N.G., Mullins, has been appointed major, medical corps, and assigned to duty as chief surgeon of the national guard of the state.

Medicomilitary Correspondence Course.—On the recommendation of the inspector-instructor of sanitary troops, concurred in by the chief surgeon, the War Department has extended the time for the completion of the medical correspondence course which is being given the medical officers of the national guard of South Carolina to September 1. The order extending the time for the surgeons to complete their reports of study also states: "Unless a medical officer shows an inclination to perform his full military duty and answers at least one of the bulletins of the medical correspondence course, he will not be assigned to camp duty this summer." All examination papers are to be sent to Dr. Alexander M. Brailsford, Jr., Chief Surgeon S. C. N. G. Mullins, who will mark them for Maj. Henry Page, Jr., M.C., U. S. Army, Fort Moultrie, while the latter is absent on leave during the summer.

TEXAS

Department of Medicine Closed.—The Southern Methodist University, Dallas, has closed its medical department, and the faculty of the department was officially suspended at a meeting of the faculty called by the executive committee of the board of trustees, June 10.

Sanitary Surveys.—A sanitary survey of Harris County was inaugurated by Dr. Michael V. Moth, Houston, assistant county health officer, in June. Dr. Moth devoted his attention particularly to the sewerage disposal, the nearness of sewers to artesian wells, to drainage and to soil pollution.

Postgraduate School for Dallas.—A meeting of physicians was held in Dallas, June 8, to form plans for the establishment of the Dallas postgraduate medical school. A committee of nine was named to formulate the organization of the school. Of this committee, Dr. Wiliam C. Swain, Dallas, is chairman.

Health Boards Organize.—Temporary organization of the Texas Association of Health Boards for the purpose of cooperating with the State Board of Health in enforcing the health laws of the state, was made effective at Austin, June 15. Dr. William B. Collins, Austin, state health officer, was elected president; Dr. William E. Spivey, Belton, vice president, and Dr. William A. Davis, Jr., Jourdantown, secretary of the Board of Health of Austin, secretary.

Personal.—Drs. William J. Calvert and Clarence M. Grigsby have resigned as members of the Board of Health of Dallas.——The Mexican Provincial Government has commissioned Dr. Manton M. Garrick, Dallas, to conduct a clean-up campaign in Mexico similar to that which he has been carrying on in Texas during the last two years.——Dr. Jesse L. Womack, Lolita, fell from a moving train near Lolita, June 14, and fractured his arm.

Health for Houston's Babies.—At a meeting held in Houston, June 22, a baby-saving campaign for the city was launched. The Houston Foundation provides the funds and the city health department furnishes the list of beneficiaries on the recommendation of the visiting nurses who find babies in need of nourishment; reliable sanitary distribution stations will be established in the city and the Nurses' Association and Child Welfare League will cooperate.

Training School for Health Officers.—The University of Texas has established a summer school for the benefit of county and city health officers of the state. The course extended over three weeks, beginning June 14, and the program consisted of lectures on municipal health, organization and administration of public health, public health laws, vital statistics, antinarcotic law, both state and federal; human carriers of disease, epidemiology, purification of water supply, plumbing and sewers, septic tanks and incinerators, vaccination, rabies and its treatment, infant feeding, baby welfare, sex hygiene, the clinical laboratory and its work, method of collecting specimens for bacteriologist, soil pollution, laboratory diagnosis, medical supervision in public schools, serums and bacterins, rural homes, school hygiene and sanitation, rural health problems and pure food. At the close of each day's session there were round table talks on subjects lectured on during the day or any other subjects chosen by those attending these lectures. There were no fees charged for this summer health course by the university, and the Texas State Board of Health asked the county and city governments to provide sufficient funds for their respective health officers to attend this meeting.

CANADA

University News.—Principal Sir William Peterson of McGill University, Montreal, announced at a recent meeting of the board of governors that the degree of LL.D. had been conferred upon King Albert of the Belgians. The following appointments were also announced in the medical faculty: assistant professor of chemistry, Dr. F. W. Skirrow; assistant professor in physiology, Dr. J. A. Gray; associate professor in pathology, Dr. Horst Oertel; assistant lecturer in physiology, Dr. T. P. Shaw; lecturers in immunology, Drs. J. C. Meakins and Fraser B. Gurd; lecturer in hygiene, Dr. R. St. J. Macdonald; lecturer in biology, Dr. F. S. Jackson, and associate professor of physics, Dr. L. V. King.

Hospital News.—The faculty of Laval University, Montreal, has decided to abandon the project of raising a general hospital for active service. Laval University offered the Canadian militia department a hospital of 520 beds. The department accepted the offer, but raised it to one of 1,040 beds. Now the university authorities have found that medical men have made their arrangements for the summer and that it would be impossible for them to raise and equip a hospital of that size.——On the commission just appointed by the Canadian government to deal with the care of Canadian wounded arriving home, appear the names of Lieut.-Colonel Thomas Walker, M.D., St. John, N. B., and Surgeon-General Carleton Jones, M.D., director-general of the Canadian Medical Services.

Personal.—Dr. J. N. Elliott Brown, who has just been appointed superintendent of the Henry Ford General Hospital, Detroit, was formerly superintendent of the Toronto General Hospital and for some time general secretary of the Ontario Medical Association.——Dr. Howard A. Kelly, Baltimore, is the guest in Toronto of Dr. Newton A. Powell. Dr. Kelly spoke in the Markham Street Tabernacle on the evening of July 4 on "Responsibilities of Christian Citizenship." A large number of medical men were present to hear the address.——Lieut.-Colonel Robert D. Rudolf, M.D., professor of therapeutics in the University of Toronto, who has

been in command of No. 2 Base Hospital with the first Canadian Expeditionary Force, is home on sick leave.——Dr. V. E. Henderson, professor of pharmacy and pharmacology in the University of Toronto, has volunteered for service in the Canadian militia and has been placed in charge of the detention camp at Kapuskasing, Ontario.——Surgeon-General Carleton Jones of the Canadian militia has returned to London, England, after a visit of inspection to the Canadian divisional medical services at the front. The Canadian wounded are distributed in nearly 200 different hospitals in the United Kingdom.

Annual Meeting of Ontario Medical Council.—Not for many years has the Ontario Medical Council held such an important meeting as that held during the week ending July 3 in Toronto. The president, Dr. James McArthur, London, Ont., having died in the interim, Dr. Herbert S. Griffin, Hamilton, vice-president, conducted the meeting, and was elected to the presidency for the ensuing year. Dr. Edmund E. King, Toronto, was elected vice-president. Through ill health the registrar, Dr. John L. Bray, was obliged to tender his resignation. Dr. Bray will be allowed an honorarium during life. Dr. H. Wilberforce Aikens, Toronto, the treasurer for many years, was elected to the combined office of registrar-treasurer.——One of the chief items of discussion was the passing of a resolution pledging the council to sign an agreement with the General Medical Council of Great Britain for reciprocity in licenses. The Canadian provinces now having this reciprocal arrangement with the mother land are Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Ontario.——A resolution was also adopted calling on the Ontario government to dispatch doctors at once to England to care for wounded Canadian soldiers suffering from impaired mentality from the results of warfare. It was recommended that physicians and nurses from the provincial hospitals for the insane be appointed to this duty.——Quacks, in the shape of osteopaths, chiropractors, etc., are to have their activities inquired into and toward this end a sum of $2,000 was voted to defray the expenses of representatives of the council to visit these so-called institutions of medical education, to gather information to lay before the proposed Commision on Medical Education to be appointed some time by the Ontario government. ——The council voted $2,000 to the fund in aid of the Belgian doctors and pharmacists.——The council will also ask the Ontario government to provide for lectures on farm sanitation in rural districts.

GENERAL

Correction.—In THE JOURNAL for July 3, 1915, p. 49, the last word in the discussion of Dr. Wilhelm's paper should be "episiotomy," not "pubiotomy."

Mississippi Valley Conference on Tuberculosis.—The Mississippi Valley Conference on Tuberculosis will be held in Indianapolis, September 29 to October 1, inclusive.

New Director of Health.—Surgeon John D. Long, U. S. P. H. S., has been made Director of Health of the Philippine Islands, a position created under the new Philippine health laws which became operative July 1.

Hospital Association Officers.—At the annual meeting of the American Hospital Association in San Francisco, June 26, Philadelphia was selected as the place of meeting for next year. Dr. Winford H. Smith, superintendent of Johns Hopkins Hospital, Baltimore, was elected president, and Mr. Asa Bacon of the Presbyterian Hospital, Chicago, was reelected treasurer.

Coke Oven Accidents.—A compilation of the coke oven accidents in the United States for the calendar years 1913 and 1914 made by Albert H. Fay of the Bureau of Mines, shows that there were ninety-one men killed, 644 seriously injured and 4,059 slightly injured. This covers the accidents in 275 active plants in 1913 and 253 in 1914. There were a number of idle plants in both years. The coke plants employed 24,345 men in 1913 and 22,313 in 1914. It is said that the occupational hazard of the coke industry compares favorably with that of the quarry industry or that of the surface works of the metal mines.

Will Study Chinese Medical Situation.—Rev. Dr. Wallace Butterick, executive secretary of the General Education Board of the Rockefeller Foundation, Dr. Simon Flexner and Dr. William H. Welch leave shortly for China, in behalf of the China Medical Board of the Rockefeller Foundation. The object of the commission is to study medical schools and hospitals connected with the missions. This work is supplemental to the previous commission, which was composed of President Judson, Francis Peabody and Mr. Roger Green. Dr. Welch is now in San Francisco and will sail for Hawaii on July 17 to meet the other commissioners there and proceed to Japan and China.

Physicians' Study Travels.—The American Society for Physicians' Study Travels announces a tour starting about September 11, to Philadelphia, Old Point Comfort, Va., Richmond, White Sulphur Springs and Virginia Hot Springs, and return in time to attend the meeting of the Medical Society of Pennsylvania. There will be interesting demonstrations and lectures at Johns Hopkins Hospital, Virginia Hot Springs, White Sulphur Springs, and Hotel Chamberlain, Old Point Comfort. Those who intend to make this tour should communicate with Dr. Albert Bernheim, 1225 Spruce Street, Philadelphia.

Pellagra.—It is reported that 1,299 cases of pellagra were reported to the Mississippi State Health Board in April. At Jackson the colored physicians and colored citizens petitioned the state charity hospital asking that the institution be opened for the treatment of pellagra patients. It is said the hospital is full of emergency cases, but the petition will call attention to the need of a separate hospital for this rapidly increasing disease. The government pellagra hospital in Spartanburg, S. C., has already received over 100 pellagra patients, and on account of the numerous applications arrangements have been made to enlarge the hospital. The Italian physicians who have heretofore participated in the triennial conventions of the National Association for the Study of Pellagra have notified Dr. J. W. Babcock, secretary, that they will not be able to be present this year on account of the war.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, Philadelphia, $5,000, to endow a bed in memory of William S. Brown, by the will of his sister, Phebe A. Brown.

University Hospital, Baltimore, $2,500, by the will of Dr. St. Clair Spruill.

Montefiore Home, New York City, $2,500; Association for the Improvement of Deaf Mutes, Hebrew Orphan Asylum, Mt. Sinai Hospital, Hebrew Infant Asylum, each $500, by the will of Julius Saul.

Chicago Lying-in Hospital, Wesley Hospital, Mercy Hospital, Visiting Nurses' Association, Presbyterian Hospital, and Home for the Destitute Crippled Children, Chicago, each $5,000; Helen Swift Morris for Infant Welfare Society and Chicago Winfield Tuberculosis Institute, each $10,000, by the will of Edward Morris.

Chicago Lying-in Hospital Endowment Fund, $10,000, donation by J. Ogden Armour.

Maine Eye and Ear Infirmary and Maine General Hospital, Portland, large bequests by the will of J. R. Martin, Portland.

The Academy of Natural Science, Philadelphia; Library of Scientific Works, and Microscopic Research and Lantern Slides, by Dr. Henry Sharpe.

FOREIGN

Mexican Situation.—The food situation in the Durango district is rapidly growing worse and the supply of food will not last until later than the middle of July.——The food supply is very scanty in Topic and San Pedro.——Consul-General Shanklin and C. J. O'Connor, Pacific directors of the American Red Cross, left Tepexcan, June 30, for Mexico City, with light boxes of medicines, leaving heavier boxes to be brought on later.——Great quantities of clothing, new and second hand, will be needed in Monterey during the fall and winter.

WAR NOTES

Aid for Belgian Physicians.—The report of the treasurer of the committee of American physicians for the aid of the Belgian profession, for the week ending July 3, 1915, lists the following contributions:

Stamford Medical Association, Stamford, Conn.	$ 25.00
Buchanan County Medical Society, St. Joseph, Mo.	27.34
Capt. W. H. Allen, M. C., U. S. A., Manila, P. I.	10.00
Yakima County Medical Society, North Yakima, Wash.	25.00
Receipts for the week ending July 3	$ 87.34
Previously reported receipts	7,457.00
Total receipts	$7,544.34
Previously reported disbursements:	
1,625 standard boxes of food at $2.20	$3,575.00
1,374 standard boxes of food at 2.30	2,930.20
353 standard boxes of food at 2.28	804.84
Total disbursements	7,310.04
Balance	$ 234.30

F. F. SIMPSON, M.D., Treasurer,
5 Jenkins Arcade Bldg., Pittsburgh, Pa.

Red Cross Activities.—The American Red Cross has shipped on the Holland-American steamer *Richard* two large lots of medical and surgical supplies, mostly assigned to the German and Austrian Red Cross societies. The German shipment is valued at $96,000 and weighs about 26,000 pounds, and the Austrian shipment is valued at $16,000 and weighs

11,203 pounds.——On the steamer *Auchendale* of the Atlantic Transport Line, the American Red Cross has sent to Dr. Antoine Depage, surgeon-general of the Belgian Red Cross at Calais, France, another Ford ambulance.——The donations secured through the American Red Cross have enabled the inquiry department of the wounded and missing of the British Red Cross Society to open branches at Malta and Alexandria, and to assist two new branches recently opened in France.——Miss Helen Scott Hay, formerly of Chicago and for the last ten months supervising nurse in the American Red Cross contingent at Kiev, Russia, has arrived in Sofia, Bulgaria, to aid Queen Eleanor in establishing a training school for nurses.——In response to an urgent appeal to the American Red Cross from Van, Turkey, for financial assistance in carrying on this work, the American Red Cross has transmitted through the state department, $1,000 to the American consul at Tiflis.

PARIS LETTER

PARIS, June 17, 1915.

The War

THE ACADEMY OF SCIENCES IN THE WAR

I mentioned in a previous letter (THE JOURNAL, Sept. 19, 1914, p. 1044) that at its session of Aug. 4, 1914, when mobilization had only begun, the Académie des sciences placed itself at the disposal of the government for the study of all questions bearing on the national defense with which it was competent to deal. A short time ago M. Albert Thomas, assistant secretary in the war department, offered to designate, as assistants to the various technical committees of the academy, officers who are well acquainted with the needs of the war. These officers, to be selected among those who have returned from the front, are to call to the attention of the committees, according to their specialties, the questions an immediate solution of which is imperative. By means of the competent advice of the academy or that of the specialists designated to act for it, the minister will be able to make a suitable decision without delay in each case. The proposition of the assistant secretary was unanimously accepted by the academy.

PYOCULTURE AND THE TREATMENT OF WOUNDS OF WAR

Dr. Pierre Delbet, professor of clinical surgery at the Faculté de médecine de Paris, in two interesting papers before the Académie des sciences and the Académie de médecine, shows that the evolution of an infected wound may be foreseen and followed by means of pyoculture—that is, by the cultivation of the microbes in the pus itself. Positive pyoculture—that is, a more abundant growth in the pus than in bouillon—is in general a sign indicating a very serious prognosis and consequently calling for free opening of the wound. Pyoculture characterized by absence of growth in the pus and by growth in the bouillon indicates a struggle that needs the aid of therapeutics. Negative pyoculture, that is, bacteriolysis of the microbes in the pus, indicates that the patient's forces have the upper hand and that no intervention is needed.

Pyoculture, moreover, furnishes indications of the value of the usual therapy of wounds of war. Delbet has become convinced that iodoform, irrigations and ether dressings do not modify the microbial flora of a wound. Irrigations with a 1:1,000 solution of silver nitrate have even produced an increase in the number and the vitality of the bacteria. Powdered lactose deodorizes but apparently does not disinfect. Hydrogen peroxid used for irrigation does not prevent the development even of anaerobic bacteria; when injected into the cellular tissue to arrest gaseous gangrene it is injurious. In short, these various antiseptics seem to have more disadvantages than advantages. They attack the bacteria but kill the tissue cells. Delbet therefore thinks that asepsis should replace antisepsis, not only with respect to normal tissues but also in the treatment of infected wounds. It is especially important to respect the natural defenses, no matter how weakened they may be. Only solutions of molecular concentration equal to that of the blood serum and having no chemical action on the cells should be used. Delbet advises opening a wound to the air and the light, which is one of the most powerful means of disinfection of wounds. Under this treatment, one often sees a positive pyoculture improve or even become negative in forty-eight hours.

STATISTICS OF CASES OF NEUROSIS DUE TO THE WAR

Dr. Paul Sollier has just presented before the Académie de médecine a paper on this subject showing that whether from the point of view of the absolute number of cases of war neurosis or from the point of view of their increase, the number of cases of neurosis due to the war is small—almost negligible in comparison with the number of the wounded of all classes and especially of those with wounds affecting the nervous system. It is reassuring that the number tends to remain stationary if not to decrease.

PROGNOSIS OF WOUNDS OF THE SPINAL CORD

Dr. Pierre Marie, professor of pathologic anatomy at the Faculté de médecine de Paris, opposes the general opinion that in wounds of the spinal cord death is almost certain to occur within a period of seven or eight weeks. In his service at the Salpêtrière, out of eighteen patients wounded in the spinal cord five or six months ago, only five have died. Pierre Marie showed before the Académie de médecine five soldiers who were struck by projectiles in the region of the cervical vertebrae. In all five the wound caused an immediate and persistent paralysis of the four limbs followed by sphincter troubles. At the end of some weeks or months, a progressive improvement occurred and the patients regained the use of their limbs to such a degree that all were able to dress and feed themselves and several can not only walk but run. The prognosis is then by no means desperate in wounds of the spinal cord, especially in the cervical region, and as such patients are well able to endure travel their chances of recovery are improved by removal, within twenty-four hours, to the nearest neurologic clinic.

RESECTION OF THE KNEE IN PLACE OF AMPUTATION OF THE THIGH FOR SERIOUS WOUNDS OF THE KNEE BY PROJECTILES

Generally, in lesions of the knee by fragments of shells, shrapnel or even by bullets, when the patella and the condyles of the femur are fractured, a purulent arthritis develops which may be cured by ankylosis after long treatment but which may also be complicated by such serious septicemia that amputation of the thigh may seem necessary to save the patient's life. Such complications are frequent, for, out of 508 amputations made by Dr. Tuffier, agrégé and surgeon of the hospitals of Paris, 200 have been amputations of the thigh, and of these thirty were necessitated by bullet wounds of the knee, which, however, are by far the most benign. The situation with respect to amputations of the thigh is very different from that of amputations of the lower leg. The mortality shown by present statistics for amputations of the thigh is frightful. Tuffier therefore advises in such cases resection of the knee, which gives a very useful limb, instead of amputation of the thigh.

RAPID WHITENING OF THE HAIR AFTER THE EXPLOSION OF A MINE

At one of the recent sessions of the Société médicale des hôpitaux de Paris, Dr. Lebar reported the case of a soldier, aged 33, who, having been blown up into the air by the explosion of a mine, next day had locks of white hair on the left side of the head. The decoloration of the hairs is complete from the base to the extremity. The longest as well as the shortest hairs are white and there is not a brown one among them. All the hairs which have become suddenly white are still firmly implanted. It would seem that the general nervous shock caused by the explosion of the mine had set in motion the medullary cells of the hair, the pigmentophagic rôle of which has been made clear by the works of Metchnikoff.

MEDICAL SERVICE AUTOMOBILES

In a letter to the minister of war M. Boussenot, a deputy, demands that the question of automobiles for the medical service at the front be solved as rapidly as possible. While Paris and the great cities of France still possess so many automobiles for the military service, men who are seriously wounded and whose chances of recovery would be improved by rapid removal in ambulances ought not to have to spend long hours on the way in horse-drawn vehicles not always well hung and extremely slow in pace. According to information that M. Boussenot has collected on the spot, from four to six of these automobiles would be amply sufficient for an army corps.

SANITATION OF MILITARY QUARTERS AND BATTLEFIELDS

Dr. Bordas, substitute professor at the Collège de France, has made to the Académie des sciences a communication proposing the sanitation of cantonments, trenches occupied by troops and battlefields by the use of copious spraying with petroleum made into an emulsion in water by means of a suitable amount of rosin soap.

LONDON LETTER

London, June 18, 1915.

The War

THE BRITISH CASUALTIES

The total British casualties of the expeditionary forces in France and the Mediterranean, including the Indian contingent, now amount to 247,114 killed, wounded and missing noncommissioned officers and men, and 10,955 officers. Of these, 47,015 men and 3,327 officers have been killed. It is to be noted that these casualties do not include those of the navy or those of the other expeditionary forces operating in the Persian Gulf, Africa and China. Thus in the two main theaters of war we have had over a quarter of a million casualties, and yet the war has only begun as far as the British army is concerned!

THE MOBILIZATION OF THE MEDICAL PROFESSION

The figures given above, and the still greater ones which they foreshadow, show the difficulty of the problem mentioned in my previous letters of providing sufficient medical service for the enormously expanded British army. Before the war we had no army in the continental sense. It has been possible to convert a large number of civilians into soldiers in six months, but the training of a physician takes as many years. Hence the difficulty. The patriotism of the medical profession is as great as that of any class, and everything possible has been done to enable physicians engaged in civil practice to join the army in as large numbers as possible, or enable those who cannot do so to give part-time service. The British Medical Association is collecting and collating information by means of its machinery, which extends all over the kingdom, for the benefit of the War Office. The interests of the army are made paramount to everything else in this emergency. A detailed register of the whole profession capable of giving help is being prepared. At the same time a system is being elaborated by which the practices of those who join the army will be conserved by their colleagues.

THE STANDARDIZATION OF THE TREATMENT OF THE WOUNDED

In an important communication to the Royal Society of Medicine on the treatment of wounds, Sir Almroth Wright pointed out that army surgeons are not able to follow their cases, the patients being moved from hospital to hospital, and thus cannot profit much by experience. He therefore advocated that the higher officers should collect and collate information and draw conclusions and issue them in the form of instructions. At Rouen, where there are a large number of British hospitals, a system of this kind is already in force. There is a council formed by the surgical specialists attached to the hospitals, of which Colonel Gray, the Aberdeen surgeon, who is the consultant for the whole area, is the president. This council advises from time to time what line of treatment should be followed in respect of different classes of injury, and the members individually use their influence to insure that the hospitals to which they are attached fall into line, so as to give the treatment a fair trial as quickly and on as large a scale as possible. A series of pamphlets describing the treatments at present in use and the grounds for their adoption has been issued. Each pamphlet originated in a paper read by request before a branch of the British Medical Association which was inaugurated at Rouen and holds fortnightly meetings. Such papers were first discussed in general conclave of the branch and then rediscussed and revised by the council of specialists in the light of the criticism received. It is intended to issue a leaflet giving the gist of any fresh experience that has been obtained.

THE SPA TREATMENT OF WOUNDED SOLDIERS

Dr. Fortescue Fox, an authority on balneology, gave an interesting lecture at the Royal Society of Medicine on "British Health Resorts: Their Uses Civil and Military." He said that there were records in very early times of the wounded going up to hot springs, and the custom had continued in Europe without interruption from the Roman period. Certain health resorts in particular obtained considerable celebrity as "soldiers' spas." It was found that bathing in these waters allayed the pain of wounds and injuries, promoted healing, and restored the use of stiff and swollen limbs. The governments of France and Germany had established many military bath hospitals, and others had been founded in Italy, Russia, America and Japan. There are many instances of soldiers after the Boer War receiving much benefit at the British spas. This agrees with the experience of other countries that suitable bath treatments give results not otherwise obtainable for war invalids, for whom all that was possible has been done by surgery and hospital treatment. A committee on the subject was formed early in the year, on which the War Office was represented. Local committees and representatives were forthwith appointed at all the health resorts, and the facilities for treatment and accommodation organized. A widespread absence of information was encountered, and a pamphlet was therefore prepared, setting forth the conditions for which waters and baths were appropriate, together with a schedule of places and treatments offered. This was circulated by the War Office to the military hospitals. The health resorts throughout the country everywhere responded, and have done splendid work, many thousands of free baths having been given to soldiers suffering from wounds, neuritis, rheumatism, shock and disorders of circulation. A system of case record cards has been established, and 7,000 already issued for use at the British spas, which will form a part of the government records, and promote the efficiency of the treatment given.

PRECAUTIONS AGAINST AIR RAIDS

The bombs dropped by the German airships on London and other British towns are of two kinds, explosive and incendiary. The fires caused by the latter in some instances have led to loss of life, mostly of children and old persons. The London police have issued the following advice to the public: In all probability, if an air raid is made, it will take place at a time when most persons are in bed, and the only intimation will probably be the reports of the antiaircraft guns, or the noise of falling bombs. People are advised not to go into the street, where they might be struck by falling missiles; moreover, the streets, being required for the passage of fire engines, etc., should not be obstructed by pedestrians. In many houses there are no facilities for procuring water on the upper floors. It is suggested, therefore, that a supply of water and sand might be kept there, so that any fire breaking out on a small scale can at once be dealt with. Every one should know the position of the fire-alarm post nearest to his house. All windows and doors on the lower floor should be closed to prevent the admission of noxious gases. An indication that poison gas is being used will be that a peculiar and irritating smell may be noticed following on the dropping of the bomb. Many inquiries have been made as to the best respirator, but no satisfactory answer can be given until the specific poison used is known. There are many forms of respirator on the market for which special advantages are claimed, but experts say that probably a pad of cotton-waste contained in gauze to tie round the head and saturated with a strong solution of washing soda would be effective as a filtering medium for noxious gases, and could be improvized at home at trifling cost. It should be dampened for use, and must protect the nose as well as the mouth, the gauze being adjusted to protect the eyes.

TRANSFERENCE FROM COMBATANT RANKS TO ARMY MEDICAL CORPS

The need for the reorganization of both our military and our industrial resources so that every person will be able to render to the country those services which he is most fitted to give in this great crisis has only gradually been appreciated. But unpreparedness for war has always been characteristic of this country, as regards its army, at any rate. The navy is a different story; indeed, it is to complete confidence in it to prevent invasion that the unpreparedness of the army can be partly traced. In their keenness for military service some physicians who were already in the combatant ranks of the territorial army went to the war in this capacity. The shortage of army surgeons has caused the government to issue instructions to the effect that physicians in the combatant ranks may obtain immediate transfer to the Army Medical Corps.

THE MORTALITY AMONG PHYSICIANS IN SERBIA

The heavy mortality, principally from typhus fever, of American and British physicians and nurses who went to the aid of Serbia has been referred to in a previous letter. The well-known surgeon, Mr. James Berry, who is at the head of a British hospital mission at Vrnjachka Banya, has collected from official sources figures which show that ninety-three Serbian physicians have died out of a total of 387 alive at the beginning of the war. Of these, no fewer than eighty-two succumbed to typhus fever, and only one was killed in battle. These figures contrast remarkably with those of the recent Turkish war in which Serbia lost only two physicians. Of the foreign physicians who have come to her aid in this war, thirty-five have died from typhus or typhoid fever. They include three British, four American, two Belgian, several Greeks, and six Austrians who are practicing in the Serbian hospitals. In addition, there is the heavy mortality among

medical students, nurses and other helpers in the Serbian hospitals.

PRECAUTIONS IN LONDON AGAINST THE IMPORTATION OF CHOLERA

The flood of Belgian refugees into this country has necessitated precautions against the importation of disease. Only a comparatively small proportion of them arrived by the port of London—13,389 up to the end of last year. All were medically examined for infectious diseases. Cholera was prevalent in several towns of Galicia last autumn, and also occurred among Austrian troops who returned to Vienna. Cases have been reported in Belgium, though there is no confirmation of this. On the other hand, it is known that Austrian troops have been fighting on the western front, and the possibility that they might introduce the disease into that part of Europe has to be considered. The health officer of the port of London thinks that cholera may occur in the course of the summer, and therefore is keeping a careful watch, so as to isolate the first suspected cases. Arrangements have been made for bacteriologic examinations in order to minimize the detention and inconvenience to persons arriving at London. Over 2,500 rats have been examined bacteriologically during the year, but no evidence of plague has been found in any of them. This is most satisfactory, as, during the previous five years, rats infected with plague were found on several occasions.

The Cost of National Insurance Estimate Much Exceeded

Experts have calculated that national insurance for the current year will cost the state $30,300,000, which is no less than $7,500,000 more than that originally anticipated by the government. This excess is not primarily due to inaccuracy in the first estimates, though to some extent the expectation of sickness among women has been falsified by experience, but arises principally from subsequent additions to the benefits—particularly the medical and sanatorium benefits—and from the concessions granted to contributors falling into arrears with their payments on account of unemployment. The total cost to the state on account of national health insurance for the year is $37,000,000. It must be remembered that this is quite apart from the contributions payable by the insured persons themselves and their employers. Accounts do not yet show the amounts received in contributions, but it is probable that the total sum will not be much less than $92,000,000 for the year in question. On this assumption, the total cost to the nation for the national insurance scheme is no less than $130,000,000.

Pharmacists Desire Easier Access to the Medical Profession

In view of the shortage of physicians, the Pharmaceutical Society brought a request before the General Medical Council for the recognition, for the purpose of admission to the Students' Register, of the certificates attesting the preliminary examination of qualified pharmacists desirous of attaining a license in medicine, and for the recognition in the medical curriculum of the classes taken and examination in medical subjects passed by qualified pharmacists in their special course of instruction. The Education Committee of the Council, in reporting on this request, pointed out that the society had no preliminary examination of its own, and that among the examinations which it recognized there were many which were not accepted by the council on the ground that their standard was not sufficiently high. The question was one which did not seem to call for any action on the part of the council, as machinery already existed in the Students' Registration Committee under which candidates whose preliminary examination was in any respect incomplete might have *pro tanto* recognition extended to those portions which were satisfactory. So far as the recognition of the professional course was concerned, the committee considered that the matter was primarily one for the consideration of the licensing bodies, who had power to recognize any course of study or examination other than the final or qualifying examination, which in their opinion was equivalent to the course of study and examination prescribed for the medical curriculum. The council approves of this report.

French Honor for Sir Almroth Wright

The Osiris prize of $20,000, which the Institute of France gives every three years as a reward for the most remarkable work or discovery in science, art, letters or industry, was awarded jointly to Professors Widal and Chantemesse and Dr. Vincent, whose names are connected with the development of antityphoid inoculation. As the Osiris prize can be given only to Frenchmen, the institute decided to award a special prize to Sir Almroth Wright, who invented the serum.

Association News

MEMBERS OF HOUSE OF DELEGATES IN ATTENDANCE AT THE SAN FRANCISCO SESSION

[The figures indicate the number of delegates to which the state is entitled].

ALABAMA—3
W. E. Drennen.....Birmingham

ARIZONA—1
H. W. Fenner.....Tucson

ARKANSAS—2
Robert Caldwell.....Little Rock

CALIFORNIA—3
H. Bert Ellis.....Los Angeles
George Hare.....Fresno
V. G. Vecki.....San Francisco

COLORADO—2
L. H. McKinnie.Colorado Springs
H. R. McGraw.....Denver

CONNECTICUT—2
E. J. McKnight.....Hartford

DELAWARE—1

DISTRICT OF COLUMBIA—1
G. Wythe Cook.....Washington

FLORIDA—1
John McDiarmid.....De Land

GEORGIA—3
E. C. Davis.....Atlanta

HAWAII—1
C. B. Cooper.....Honolulu

IDAHO—1

ILLINOIS—9
G. L. Armstrong.....Taylorville
J. W. Hamilton.....Mt. Vernon
R. R. Ferguson.....Chicago
W. L. Noble.....Chicago
C. P. Caldwell.....Chicago
George Bell.....Chicago
Charles J. Whalen.....Chicago
Charles E. Humiston.....Chicago
J. M. Pfeiffenberger.....Alton

INDIANA—4
J. Rilus Eastman....Indianapolis
Charles N. Combs...Terre Haute
C. H. Good.....Huntington
Miles F. Porter...Fort Wayne

IOWA—3
I. W. Littig.....Davenport
M. N. Voldeng.....Woodward
J. C. Rockafellow...Des Moines

ISTHMIAN CANAL ZONE—1

KANSAS—2
M. F. Jarrett.....Fort Scott

KENTUCKY—4
Frank Boyd.....Paducah
M. E. Alderson.....Russellville
Milton Board.....Louisville

LOUISIANA—2
William H. Seeman.New Orleans

MAINE—1

MARYLAND—2
Alexius McGlannan....Baltimore
Curtis F. Burnam.....Baltimore

MASSACHUSETTS—5
Gilman Osgood.....Rockland
Lyman A. Jones...North Adams
J. Forrest Burnham....Lawrence
Hugh Cabot.....Boston

MICHIGAN—4
E. W. Haass.....Detroit
A. E. W. Yale.....Pigeon
L. J. Hirschman.....Detroit
H. E. Randall.....Flint

MINNESOTA—2

MISSISSIPPI—2
L. C. Feemster.....Tupelo
James M. Guthrie.....Meridian

MISSOURI—5
A. W. McAlester, Jr..Kansas City
E. J. Goodwin.....St. Louis
Robert M. Funkhouser..St. Louis

MONTANA—1
LeRoy Southmayd....Great Falls

NEBRASKA—2
A. R. Mitchell.....Lincoln

NEVADA—1
M. R. Walker.....Reno

NEW HAMPSHIRE—1
D. E. Sullivan.....Concord

NEW JERSEY—3
Linn Emerson.....Orange
William S. Lalor.....Trenton

NEW MEXICO—1
Samuel D. Swope.....Deming

NEW YORK—11
Dwight H. Murray.....Syracuse
Wendell C. Phillips....New York
James W. Fleming.....Brooklyn
J. C. MacEvitt.....Brooklyn
Emil Heuel.....New York
George A. Peck....New Rochelle
William F. Campbell...Brooklyn
M. M. Lucid.....Cortland
John William Draper..New York
John O. Polak.....Brooklyn
Floyd M. Crandall.....New York

NORTH CAROLINA—2
J. P. Munroe.....Charlotte
A. J. Crowell.....Charlotte

NORTH DAKOTA—1
C. S. Crane.....Grand Forks

OHIO—6
J. C. M. Floyd.....Steubenville
A. B. Walker.....Canton

OKLAHOMA—2
W. Albert Cook.....Tulsa
Walter Penquite.....Chickasha

OREGON—1
Walter T. Williamson...Portland

PENNSYLVANIA—9
John B. Carrell.....Hatboro
Herbert B. Gibby....Wilkes-Barre
E. E. Montgomery...Philadelphia
L. W. Gates.....Scranton
Jefferson H. Wilson.....Beaver

PHILIPPINE ISLANDS—1

PORTO RICO—1

RHODE ISLAND—1

SOUTH CAROLINA—1
E. A. Hines.....Seneca

SOUTH DAKOTA—1
L. G. Hill.....Watertown

TENNESSEE—2
Perry Bromberg.....Nashville
Jere L. Crook.....Jackson

TEXAS—5
C. E. Cantrell.....Greenville
Marvin L. Graves.....Galveston
A. B. Small.....Dallas
Edward H. Cary.....Dallas
W. B. Russ.....San Antonio

UTAH—1
Sol G. Kahn.....Salt Lake City

VERMONT—1

VIRGINIA—3

WASHINGTON—2
G. S. Peterkin.....Seattle
E. A. Rich.....Tacoma

WEST VIRGINIA—1

WISCONSIN—3
A. H. Levings.....Milwaukee
Daniel Hopkinson.....Milwaukee

WYOMING—1

Delegates from the Sections

PRACTICE OF MEDICINE
Richard C. Cabot.....Boston

SURGERY, GENERAL AND ABDOMINAL
Dean Lewis.....Chicago

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

OPHTHALMOLOGY
Walter R. Parker.....Detroit

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

DISEASES OF CHILDREN
T. C. McCleave...Berkeley, Calif.

PHARMACOLOGY AND THERAPEUTICS
Ray L. Wilbur....San Francisco

PATHOLOGY AND PHYSIOLOGY

STOMATOLOGY
G. V. I. Brown.....Milwaukee

NERVOUS AND MENTAL DISEASES
J. H. McBride....Pasadena, Calif.

DERMATOLOGY
E. D. Chipman....San Francisco

PREVENTIVE MEDICINE AND PUBLIC HEALTH

GENITO-URINARY DISEASES
F. M. McCallum....Kansas City

HOSPITALS

ORTHOPEDIC SURGERY
John Ridlon.....Chicago

Delegates from Government Services

Wm. H. Arthur.....
.....United States Army
Frank E. McCullough.....
.....United States Navy
J. W. Kerr.....
....U. S. Public Health Service

SECTION ON OPHTHALMOLOGY

TUESDAY, JUNE 22—AFTERNOON

The Chairman, Dr. Edward C. Ellett, called the meeting to order at 2:25 p. m.

Dr. John A. Donovan, Butte, Mont., Vice-Chairman, was called to the chair while Dr. Ellett read his Chairman's address. No discussion.

Dr. Edward Jackson, Denver, read a paper on "Blastomycosis of the Eyelids, with Report of Cases." Discussed by Drs. Robert Fagin, Memphis, Tenn.; Harold Gifford, Omaha; John A. Donovan, Butte, Mont.; George S. Derby, Boston; E. C. Ellett, Memphis, Tenn., and Edward Jackson, Denver.

The Chairman appointed Drs. Edward Jackson, Denver, and G. C. Savage, Nashville, Tenn., to serve in place of absentees on the Executive Committee.

Dr. Meyer Wiener, St. Louis, read a paper by himself and Dr. Henry L. Wolfner on "A Reaction of the Pupil Strongly Suggestive of Arteriosclerosis with Increased Blood Pressure." Discussed by Drs. Walter S. Franklin, San Francisco; Edward Jackson, Denver, and Meyer Wiener, St. Louis.

Dr. Clifford B. Walker, Boston, read a paper on "A Contribution to the Study of Bitemporal Hemianopsia (Lantern Demonstration)." Discussed by Drs. W. F. Blake, San Francisco; J. A. Donovan, Butte, Mont., and C. B. Walker, Boston.

Dr. Nelson M. Black, Milwaukee, gave a lantern demonstration of the various colored glasses on the market.

The Chairman announced that Dr. Will Walter of Chicago would not be present to read his paper. The Chairman said that Dr. G. C. Savage, Nashville, Tenn., had given much time to the preparation of the discussion of Dr. Walter's paper and that if no objection was made he would call for discussion on the subject which Dr. Walter was to introduce, "Clinical Pathology of Ocular Muscle Paralysis. A Study of the Control of Ocular Muscles."

Dr. G. C. Savage, Nashville, Tenn., then discussed the paper of Dr. Walter, illustrating his discussion with charts.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

TUESDAY, JUNE 22—AFTERNOON

The section was called to order at 2 p. m. by Dr. Alfred B. Spalding, San Francisco.

On account of the illness of the chairman, Dr. Thomas S. Cullen, Baltimore, and vice chairman, Dr. George B. Somers, San Francisco, the section unanimously elected Dr. S. H. Buteau, Oakland, Calif., to act as chairman, and Dr. Spalding was elected secretary.

The address of the chairman, Dr. Thomas S. Cullen, Baltimore, entitled "The Relation of Surgery, Gynecology and Obstetrics to the Public," was read by Dr. Horace G. Wetherill, Denver. No discussion.

Dr. J. Morris Slemons, San Francisco, read a paper on "Placental Bacteremia." Discussed by Drs. E. E. Montgomery of Philadelphia, and Henry O. Marcy, Boston.

Dr. E. E. Montgomery, Philadelphia, read a paper on "Abortion." Discussed by Drs. Alfred B. Spalding, San Francisco; John Osborn Polak, Brooklyn; O. Walton Hall, Kansas City, Mo.; S. M. Clark, New Orleans, and Horace G. Wetherill, Denver.

Dr. Henry O. Marcy, Boston, read a paper on "The Histogenesis of the Reproductive Processes in Mammals." Discussed by Dr. E. E. Montgomery, Philadelphia.

The following papers were read as a symposium on anesthesia in labor:

Dr. Carl H. Davis, Chicago: "Advantages of Nitrous Oxid Analgesia in Obstetrics over the Freiburg Method."

Dr. John Osborn Polak, Brooklyn: "The Appreciation and Limitations of Morphin-Scopolamin Amnesia in Obstetrics."

These two papers were discussed by Drs. Walter E. Libby, San Francisco; W. Francis B. Wakefield, San Francisco; J. C. Litzenberg, Minneapolis; C. G. Parsons, Denver; Carl L. Hoag, San Francisco; L. I. Breitstein, San Francisco; M. W. Kapp, San José, Calif.; E. M. Lazard, Los Angeles; L. M. Gates, Scranton, Pa.; Hugh S. Mount, Oregon City, Ore., and Livingston.

THURSDAY, JUNE 24—MORNING

The following officers were elected: chairman, Dr. Edward S. Reynolds, Boston; vice chairman, Dr. Alfred B. Spalding, San Francisco; secretary, Dr. Brooke M. Anspach, Philadelphia; member of the House of Delegates, Dr. P. Brookes Bland, Philadelphia.

Dr. Howard Canning Taylor, New York, read a paper on "Tuberculosis of the Uterine Appendages." Discussed by Drs. Philemon E. Truesdale, Fall River, Mass.; Engstad, Minneapolis; O. W. Hall, Kansas City, Mo.; E. E. Montgomery, Philadelphia, and S. M. D. Clark, New Orleans.

Dr. W. D. Haggard, Nashville, Tenn., read a paper on "Application of Various Theories in the Practical Management of Peritonitis." Discussed by Drs. W. B. Brinsmade, Brooklyn; J. O. Polak, Brooklyn; Petit, Boston; Edward Reynolds, Boston; Joseph B. DeLee, Chicago, and H. O. Pantzer, Indianapolis.

Dr. L. G. Bowers, Dayton, Ohio, read a paper on "Pelvic Infection and the Application of Drainage." Discussed by Drs. S. M. D. Clark, New Orleans, and H. W. Gibbons, San Francisco.

Dr. Alfred B. Spalding, San Francisco, read a paper on "Relative Frequency of Ectopic Gestation." Discussed by Dr. Joseph B. DeLee, Chicago.

Dr. Edward Reynolds, Boston, read a paper on "The Prognosis of Sterility." Discussed by Drs. J. O. Polak, Brooklyn; Joseph B. DeLee, Chicago, and H. O. Pantzer, Indianapolis.

The following papers were read as a symposium on the treatment of cancer of the uterus and rectum by radium:

Dr. Henry Schmitz, Chicago: "Primary Results of Radium Therapy on Uterine and Rectal Cancers."

Drs. Curtis F. Burnam and Howard A. Kelly, Baltimore: "Radium in the Treatment of Carcinomas of the Cervix Uteri and Vagina."

These two papers were discussed by Drs. J. F. Percy, Galesburg, Ill., and S. M. D. Clark, New Orleans.

Dr. Horace G. Wetherill, Denver, read a paper on "Sub-

THURSDAY, JUNE 24—AFTERNOON

infection from Foci in the Pelvis and Abdomen." Discussed by Drs. Carl H. Davis, Chicago, and Alfred B. Spalding, San Francisco.

Dr. W. Wayne Babcock, Philadelphia, read a paper on "Cholecystectomy and Cholecystic Toxemia." Discussed by Dr. Robert C. Coffey, Portland, Ore.

Dr. P. E. Truesdale, Fall River, Mass., read a paper on "The Pylorus: Observations Noted in Association with Gastro-Intestinal Lesions." Discussed by Drs. Frederick Murphy, St. Louis, and Max Einhorn, New York.

Dr. Robert C. Coffey, Portland, Ore., read a paper on "The Significance of the Fixation of Certain Abdominal Organs in the Human Body." Discussed by Drs. Max Einhorn, New York; Albert Goldspohn, Chicago; A. N. Creadick, Portland, Ore., and H. O. Pantzer, Indianapolis.

Alexius McGlannan, Baltimore, read a paper on "Intestinal Obstruction." Discussed by Dr. Draper, New York.

On motion of Dr. Wetherill, duly seconded, the secretary was requested to express to Dr. George B. Somers, San Francisco, the regret of the section at his inability to attend the meeting.

On motion of Dr. Wetherill, duly seconded, the section expressed its appreciation, by rising vote, to Dr. Buteau in acting as chairman, and Dr. Spalding, as secretary, and for the very able manner in which they had performed these duties.

Marriages

HUMBERT A. GIOVANNETTI, M.D., Bay Bulls, Belle Isle, N. F., to KATHERYN T. DRISCOLL, M.D., of Medford Hillside, Mass., June 17.

FORREST GRIMM SCHAEFFER, M.D., Allentown, Pa., to Miss Grace Wright Willis of Philadelphia, in New York City, June 21.

MARTIN KRANZ, M.D., Mandan, N. D., to Miss Balbina Marcella Hess of Glen Ullin, N. D., in Terre Haute, Ind., June 14.

JOHN C. KOCH, M.D., Blackduck, Minn., to Miss Gladys Weingart of Baudette, Minn., in Iowa, June 10.

GEORGE DOREMUS STILSON, M.D., to Miss Amanda E. Garwick, both of Niagara Falls, N. Y., June 24.

HOMER ATKINSON RAMSDELL, M.D., to Miss Charlotte Sweetnam, both of Manistee, Mich., June 30.

CLEVELAND FOLSOM BROOKS, M.D., Platte, S. D., to Miss Esther Beebe of Lake Andes, S. D., June 8.

ARTHUR ALBERT WOHLRABE, M.D., Mankato, Minn., to Miss Elsye Ellen Cabot of Minneapolis, June 12.

LYSTON D. HOWE, M.D., Streator, Ill., to Miss Lillian Monroe of Joliet, Ill., in Chicago, June 16.

MOSES HAVEN BAKER, M.D., Pittsburgh, to Miss Nita M. Cashman of New Oxford, Pa., June 24.

WALTER PALMER ANDERSON, M.D., to Miss Ethel Kingsland, both of New York City, June 24.

CARL LAWRENCE LUTZ, M.D., Avalon, Pa., to Miss Kathryn Esther McNeal of Pittsburgh, June 24.

FRANCIS A. MALONE, M.D., Waterford, Wis., to Miss Marie C. Scholl of Pewaukee, Wis., June 19.

JAMES MONTGOMERY NIXON, M.D., to Miss Iris Genoa Boyer, both of Millville, Fla., June 8.

HENRY ALBERT GEIB, M.D., to Miss Mary E. O'Conner, both of New York City, February 25.

EMERSON MEGRAIL, M.D., to Miss Margaret Ethel Reed, both of Wheeling, W. Va., June 23.

FRED MCV. TOWLES, M.D., Fort Wayne, Ind., to Miss Lillian Tappan of Helena, Ark., June 9.

JOHN IRWIN MCGIRR, M.D., Beatrice, Minn., to Miss Myrtle Evelyn Gue of Denver, June 22.

BENJAMIN H. HOLMES, M.D., to Miss Esther M. Tyrrell, both of Delavan, Wis., June 24.

JOSEPH WEBSTER HORTON, M.D., to Miss Florence Clift, both of Chattanooga, June .).

CHARLES W. JENNINGS, M.D., to Miss Katharine Shuman, both of Pittsburgh, June 16.

SAMUEL D. ROSENTHAL, M.D., to Miss Tubie Greenspahn, both of Chicago, July 4.

HENRY M. RUBEL, M.D., to Miss Minnie S. Adler, both of Louisville, Ky., June 14.

CHARLES W. NORRIS, M.D., to Miss Juliet M. Klein, both of Lexington, Ky., June 17.

Deaths

St. Clair Spruill, M.D. University of Maryland, Baltimore, 1890; aged 49; a Fellow of the American Medical Association; First Lieutenant, Medical Reserve Corps, U. S. Army; clinical professor of surgery in his alma mater; from 1892 to 1898 superintendent of the Lying-In Hospital of the University of Maryland; surgeon to the University and Hebrew hospitals; attending surgeon to the Maryland General Hospital, Baltimore; and the Emergency Hospital, Annapolis, Md.; chief surgeon to the Washington, Baltimore and Annapolis Railway, and consulting surgeon to the Baltimore and Ohio System; from 1902 to 1904, major and surgeon, Maryland N. G., assigned Fifth Infantry; died at his home in Baltimore, June 24, from septic bronchitis following influenza.

Faneuil Dunkin Weisse, M.D. New York University, New York City, 1864; aged 73; of New York City; a Fellow of the American Medical Association and of the New York Academy of Medicine; a member of the American Association of Anatomists and New York Dermatological Society; a member of the anatomic teaching force of his alma mater from 1864 to 1889; professor of anatomy in and dean of the New York College of Dentistry; president of the American Veterinary College; acting assistant surgeon, U. S. Army, during the Civil War; author of *Weisse's Practical Human Anatomy*, the first edition of which appeared in 1886; died at his country home in Gedney Farms, June 22.

Thomas Hewson Bradford, M.D. Jefferson Medical College, 1874; aged 66; a member of the Medical Society of the State of Pennsylvania and a Fellow of the College of Physicians of Philadelphia; medical director of the Philadelphia Life Insurance Company and United Security Life and Trust Company; district physician to the Philadelphia Dispensary; physician to the Charity, Howard and St. Christopher's hospitals and the Children's Hospital Dispensary; gynecologist to the outpatient department of Pennsylvania Hospital; assistant accoucheur to the State Hospital for Women; an officer of the Medical Corps of the National Guard of Pennsylvania, from 1880 to 1883; died at his home in Philadelphia, June 25.

Frederick Weills Byers, M.D. Rush Medical College, 1863; aged 78; Lieutenant and Assistant Surgeon of the Ninety-Sixth Illinois Volunteer Infantry during the Civil War; Brigadier-General and Surgeon-General (retired) of the Wisconsin National Guard; a member of the Association of Military Surgeons of the United States and National Association of Railway Surgeons; for many years local surgeon at Monroe, Wis., for the Illinois Central Railroad; a member of the Wisconsin Legislature, from 1884 to 1886; died at his home in Monroe, Wis., June 19.

William Henry Gregg, M.D. College of Physicians and Surgeons in the City of New York, 1855; aged 85; surgeon of the Sixty-Ninth New York Volunteer Infantry and subsequently of the Eighth Brigade during the Civil War; a member of the American Association for the Advancement of Science and for many years a practitioner of New York City and Port Chester, N. Y.; an expert chemist and well known as an naturalist; author of a standard history of the birds of western New York; died at St. Cloud, Fla., June 21.

Jacob Walter Bean, M.D. University of Vermont, Burlington, 1882; aged 60; a member of the Massachusetts and New Hampshire medical societies; and formerly president of the Medford Medical Society; chairman of the Medford (Mass.) Board of Health; a member of the New Hampshire Legislature, in 1889 and 1890; for twenty-five years a practitioner of West Medford; died suddenly at his home in that city, June 20, from heart disease.

Benjamin Ellis Marshall, M.D. College of Physicians and Surgeons in the City of New York, 1861; aged 85; Acting Assistant Surgeon, U. S. Navy, during the Civil War, in which he served almost entirely on the blockading squadron; from 1866 to 1890 a practitioner of San Mateo, Calif., and for ten years thereafter, until his retirement in 1900, a resident of San Francisco; died in Paterson, N. J., May 17, from senile debility.

Gustav Louis Krieger, M.D. New York University, New York City, 1877; aged 65; a Fellow of the American Medical Association; and a prominent factor in medical and educational affairs in Cincinnati; for fifteen years president of the Board of Education of Madisonville and a member of the Cincinnati board after the annexation of Madisonville; died at his home, June 25, from valvular heart disease.

Rebecca V. Combs, M.D. Ohio Medical University, Columbus, 1896; aged 62; of Columbus, Ohio; a member of the Ohio State Medical Association and a specialist on disease of children; who had suffered for a long time from neuritis and malignant disease of the face, died in the St. Clair Hospital, Columbus, June 21, from the effects of strychnin, self-administered, it is believed, while despondent on account of ill health.

Seraph Frissell, M.D. University of Michigan, Ann Arbor, 1875; aged 74; the first woman to be admitted to membership in the Berkshire County (Mass.) Medical Society; for two years lecturer on physiology and hygiene in Mt. Holyoke Seminary; a practitioner of Springfield, Pittsfield and Hinsdale, Mass., for forty years; died in the Wahconah Home for the Aged, Dalton, Mass., June 20.

Herbert C. Sperry, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1896; aged 47; a member of the Illinois State Medical Society; a practitioner and pharmacist of Hull, Ill., and also manager of the Electric Light Plant of Hull; was accidentally electrocuted, June 21, by coming in contact with an electric wire of high voltage while attempting to make repairs.

Hiram Neill, M.D. Bellevue Hospital Medical College, 1879; aged 71; a veteran of the Civil War; until 1912 a practitioner of Sibley, Ia., where he was health officer and local surgeon for the Chicago, St. Paul, Minneapolis and Omaha, and Rock Island System; died at his home in San Gabriel, Calif., June 15, from carcinoma of the stomach.

William G. Hall, M.D. Western Homeopathic Medical College, Cleveland, 1858; aged 84; surgeon-major of the Tenth Ohio Volunteer Cavalry during the Civil War; at one time a member of the Missouri State Board of Health; for nearly forty years a practitioner of St. Joseph; died at the home of his son in Kansas City, June 11.

Hiram Owen Worthen, M.D. University of Vermont, Burlington, 1869; aged 76; director and vice president of the Granite Savings Bank and Trust Company, Barre, Vt.; town representative in 1888 and state senator from Washington County in 1894; died at his home in Barre, Vt., June 13, from chronic disease of the stomach.

Walter Hilliard, M.D. Tulane University, New Orleans, 1869; aged 70; a member of the Colorado State Medical Society and for twenty-six years a practitioner of Denver, making a specialty of diseases of the eye, ear, nose and throat; died at his home in Denver, June 17, from cirrhosis of the liver.

Leon Octave Monory, M.D. Faculty of Medicine, Paris, France, 1873; aged 69; formerly a surgeon in the French army and a veteran of the Franco-German War; visiting physician to the French Hospital, New York City; died at his home in New York, June 16, from cerebral hemorrhage.

Samuel Weiss, M.D. Bellevue Hospital Medical College, 1871; aged 70; state senator from Lebanon County in 1900; attending physician to the Lebanon County Hospital and gynecologist to the Good Samaritan Hospital; died at his home in Lebanon, Pa., June 17, from chronic nephritis.

John Slick Riley, M.D. University of Ohio, Cincinnati, 1836; aged 102; a veteran of the Mexican and Civil wars, in the latter of which he served in the Confederate service; for many years a practitioner of Pilot Point, Tex.; died at the home of his daughter in Denton, Tex., June 12.

Charles Adams Stewart, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1870; aged 67; a Fellow of the American Medical Association; for more than a quarter of a century, a prominent surgeon of Duluth, Minn.; died in Minneapolis, June 22, from cerebral hemorrhage.

Mary Elizabeth Nowell, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1884; aged 72; a Fellow of the American Medical Association and the first woman to engage in general practice in Altoona, Pa.; died at her home in that city, June 25, from pneumonia.

Samuel J. Windsor, M.D. College of Physicians and Surgeons, Baltimore, 1886; aged 52; a Fellow of the American Medical Association; until two years ago a practitioner of Dames Quarter, Eastern Shore, Md.; died at his home in Baltimore, June 21, from heart disease.

Stanley George Small, M.D. Cleveland Homeopathic Medical College, 1898; aged 41; a Fellow of the American Medical Association; formerly a practitioner of Allegheny, Pa., and for five years a resident of Santa Fe, N. M.; died in Kane, Pa., June 20, from tuberculosis.

William H. Hudson, M.D. Meharry Medical College, Nashville, Tenn., 1887; aged 53; formerly a member of the Kansas Medical Society; a well-known and wealthy colored practitioner of Atchison, Kan.; died at a sanatorium in Chicago, June 20, from tuberculosis.

Robert MacDermott Langdon, M.D. University of Berlin, Germany, 1880; Illinois Medical College, Chicago, 1897; Long Island College Hospital, Brooklyn, 1898; aged 55; formerly of New York City; died at his home in Englewood Cliff, N. J., June 17.

John Aloysius Frayne, M.D. Medico-Chirurgical College of Philadelphia, 1914; aged 26; an intern at the State Hospital of the Northern Anthracite Coal Region of Pennsylvania, Scranton; died in that institution, June 17, from acute gastritis.

Charles William Prentiss, M.A. Middletown, 1896; Ph.D., Harvard University, 1900; aged 40; professor of microscopic anatomy in Northwestern University Medical School, Chicago; died in Wesley Hospital, Chicago, June 12.

Warren R. Sober, M.D. Eclectic Medical Institute, Cincinnati, 1875; aged 65; for many years a practitioner of Clare County, Mich.; died at the home of his son in Three Rivers, Mich., June 17, from disease of the kidney.

Charles Henry Earle, M.D. Bellevue Hospital Medical College, 1889; a member of the Medical Society of the State of California; formerly a resident of Providence, R. I.; died at his home in Los Angeles, June 12, aged 54.

Frantz Josef Meyer, M.D. Missouri Medical College, St. Louis, 1887; a member of the Illinois State Medical Society; died at his home in Evansville, Ill., about May 10, from carcinoma of the inferior maxilla, aged 50.

George Edens Woods, M.D. Vanderbilt University, Nashville, 1906; aged 37; formerly a practitioner of East Tennessee; then for three years a resident of Albuquerque, N. M.; died at Morristown, Tenn., June 8.

Albert William Hancock, M.D. Harvard Medical School, 1904; of Lawrence, Mass.; a Fellow of the American Medical Association; was drowned while bathing in the surf at Saulsbury Beach, Mass., June 18, aged 38.

Job Corbin, M.D. University of Vermont, Burlington, 1859; a surgeon in the Navy throughout the Civil War; for more than forty-five years a practitioner of Brooklyn; died at his home in that city, June 16, aged 80.

William W. Wilhelm, M.D. University of Pennsylvania, Philadelphia, 1876; aged 65; of Eufola, N. C.; died in a hospital at Statesville, June 20, after an operation for intestinal disease, performed the day before.

John McP. Briggs, M.D. University of Nashville, Tenn., 1859; formerly a member of the Kentucky State Medical Association; died at his home near Woodburn, Ky., June 8, from disease of the stomach, aged 78.

Herbert Oliver Forbes, M.D. Medical College of Virginia, Richmond, 1904; a member of the Medical Society of Virginia; of Burkeville; died at the home of his brother in Lynchburg, Va., June 10, aged 37.

Robert N. Ramsay, M.D. University of Pennsylvania, Philadelphia, 1875; a Fellow of the American Medical Association; died at his home in Philadelphia, June 16, from heart disease, aged 58.

Robert S. Austin, M.D. Marion-Sims College of Medicine, St. Louis, 1892; of Hallsville, Mo.; aged 54; died at the home of his daughter in Fort Smith, Ark., June 12, from a nervous breakdown.

Liberia Cornish (license, Md., 1894); said to have been the oldest colored practitioner of Baltimore; died at his home, June 9, from disease of the stomach, aged 84.

Isaac E. Wells, M.D. Central College of Physicians and Surgeons, Indianapolis, 1895; died at his home in Chalmers, Ind., June 15, from disease of the stomach, aged 51.

Paul Cheeves Gaston, M.D. Vanderbilt University, Nashville, Tenn., 1878; died at his home in New Decatur, Ala., June 16, from carcinoma of the rectum, aged 67.

A. S. Childs, M.D. Hahnemann Medical College, Chicago, 1878; of Chicago and Wilmette, Ill.; died at his home in Wilmette, about June 21.

James Clark Gillespie, M.D. Vanderbilt University, Nashville, Tenn., 1881; died recently at his home in New Decatur, Ala., from pellagra.

James N. Bridges (license, Tenn., 1889); died at his home in New Middleton, Tenn., June 12, aged 79.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

GRAY'S GLYCERINE TONIC

Report of the Council on Pharmacy and Chemistry

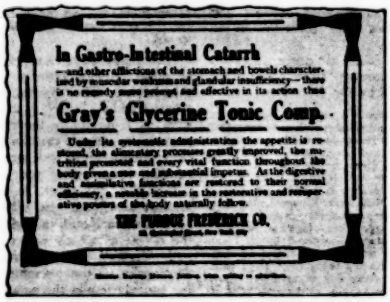
The Council adopted the following report and authorized its publication. W. A. PUCKNER, Secretary.

Gray's Glycerine Tonic Comp. (Purdue Frederick Company, New York) is a mixture said to be made according to a prescription of the late Dr. John P. Gray, superintendent of the state hospital, Utica, New York. As to the composition, the following statement is furnished by the company:

"This preparation is a combination of Glycerine, Sherry Wine, Gentian, Taraxacum and Phosphoric Acid with carminatives."

The label declares the presence of 11 per cent. alcohol, and the dose is given as from two teaspoonfuls to a tablespoonful. A study of the ingredients will show that, aside from the alcohol, the mixture contains but one really active drug, gentian. Essentially, then, "Gray's Glycerine Tonic" is a mixture which, in addition to the narcotic effect of the alcohol, depends on a bitter, gentian, for whatever therapeutic action it may possess.

The bitters, of which gentian is a type, were once credited with many therapeutic virtues which time has shown they do not possess. Pharmacologic research has demonstrated that their utility consists in stimulating the appetite through their action on the taste buds. On this account they were believed also to increase the secretion of the gastric juice by a psychic impression. More recently, however, even this has been questioned—by Carlson, for instance.



This appears in a journal owned and controlled by the second largest state medical association of the country.

These facts are fully understood, presumably, by all physicians. Yet, according to the advertising circular, this "tonic," which, for all practical purposes, is merely a simple bitter, is good for thirty-two diseases ranging from amenorrhea to whooping cough!

The conditions in which Gray's Glycerine Tonic is asserted to be especially efficient are described on the label of the bottle and the outside wrapper, in popular terms, more or less typical of "patent medicine" exploitation, such as "catarrhal conditions," and "stomach derangements." Similar statements are contained in the leaflet accompanying the trade package. For instance:

"It is, therefore, an effective, reliable tonic in nervous exhaustion, general debility, impoverished conditions of the blood and nervous system, Bright's disease, diseases of the liver, disorders of the urinary organs, etc."

"It is an unexcelled restorative in that very common class of cases in which there is no positive organic disease, but the patient complains that he 'does not feel well' or 'is out of sorts.'"

Here are some of the claims made in other advertising matter:

"All stages of bronchitis . . . are rapidly improved by the use of Gray's Glycerine Tonic Comp. This remedy has a direct tonic influence upon the circulation of the respiratory mucous membrane; it relieves congestion and restores tone to weakened blood vessels."

". . . improves the appetite, gives valuable aid to the digestive and absorptive processes, and reinforces cellular nutrition in ways that insure a notable gain in vitality and strength."

Even granting that gentian may improve the appetite, how absurd it is to claim that this mixture "relieves congestion," "restores tone to weakened blood vessels," "gives aid to the absorptive processes," "reinforces cellular nutrition," or increases vitality!

Neither the composition of Gray's Glycerine Tonic nor the clinical evidence warrants the belief that it has any therapeutic value other than that due to the psychic effect of the bitter drug gentian. Physicians who have prescribed it have done so because of the advertising. This nostrum has been kept so constantly before the eyes of medical men that they think of Gray's Glycerine Tonic when they cannot remember the official drugs that may be indicated in the case. The moral is that liberal advertising will sell anything.

It is recommended that Gray's Glycerine Tonic Comp. be declared not eligible for inclusion in New and Nonofficial Remedies on account of conflict with Rules, 1, 6, 8 and 10.

[EDITORIAL NOTE.—An old practice in hospitals—happily now practically obsolete—was to have certain stock mixtures prepared in bulk. Among these there was usually a so-called tonic mixture, used in a more or less haphazard manner when nothing in particular seemed indicated. Such a stock mixture was used in the State Hospital for the Insane at Utica, N. Y., during the many years that Dr. John P. Gray was superintendent (from the early fifties to the early eighties), although it is very doubtful whether he originated the mixture.

After the death of Dr. Gray—so the story runs—one of his sons, with a partner, formed the firm of Purdue Frederick Company, and began the exploitation of the elder Dr. Gray's name, in connection, presumably, with this stock preparation. As indicated in the Council's report, Gray's Glycerine Tonic Comp.—and what an absurd name!—is simply a mixture of ordinary drugs, requiring no skill whatever in compounding. If there is a physician living who can not write a prescription offhand as good as this formula, that physician should either go back to a medical school, or change his vocation. There is, and can be, no excuse for prescribing such a ready-made mixture, for every cross-roads drugstore has the ingredients and any pharmacist worthy of the name could compound it. Among the scores of nostrums that disgrace the medical profession of this country, none is more typical of all that is inimical to scientific medicine, to the medical profession and above all to the public—for, after all is said, it is the public that ultimately is humbugged.]

Correspondence

Ben Franklin's Views

To the Editor:—Dr. Shively's statement (THE JOURNAL, June 19, 1915, p. 2085) that Franklin's "early objection to alcoholic beverages was chiefly on the ground of their expensiveness" is incorrect. His argument rested chiefly on the ground that drinking was "muddling" and that one who drank was a less efficient workman than one who did not—weaker, not stronger; the expense argument appears to be secondary. This may be seen from the statement taken from Franklin's autobiography which was published in THE JOURNAL (Miscellany, June 5, 1915, p. 1933).

Franklin never used tobacco. Dr. Benjamin Rush writes of him in his diary:

He concluded that there was no great advantage in using tobacco in any way, for that he had kept company with persons who used it all

their life and no one ever advised him to use it. The doctor in the 81st year of his age declared he had never snuffed, chewed or smoked.

I must confess that Dr. Shively's estimate of Poor Richard's maxims as "homely, parsimonious . . . and archaic as the author's lightning rods and his old fur cap" somewhat rile me. Indeed, to my mind the chief thing on which rests Franklin's greatness is the fact that he enunciates sound principles which are eternally true, thus taking rank with great immortals of all time such as Socrates, Plato, Aristotle, Leonardo, Shakespeare, Sir Isaac Newton and Pasteur.

Certainly these four maxims, which I have often recalled, will be admitted by Dr. Shively as not being out of date:

Want of care does us more damage than want of knowledge.
The most exquisite folly is made of wisdom spun too fine.
What signifies knowing the names, if you know not the nature of things?
No man e'er was glorious who was not laborious.

I spent a whole summer reading all that I could find on the subject of Franklin, and published a little book in 1912 calling attention to his contribution to medicine (now out of print). Had this great man labored only in the field of medicine and done nothing else, he would have been entitled to the lasting gratitude of posterity.

Dr. Shively, however, does justice to Franklin when he states that Franklin's views as to the value of fresh air are "the equal of the most advanced views current today," although I fear this may give some of your readers the impression that this was Franklin's only contribution to medicine.

Franklin's views on the value of fresh air are even more clearly set forth in the following passage from one of his letters than in the abstract published by Dr. Shively:

Experience has convinced me of my Error. I now look upon fresh Air as a friend; I even sleep with an open Window. I am persuaded that no common Air from without is so unwholesome as the Air within a close Room, that has been often breath'd and not changed. Moist Air, too, which formerly I thought Pernicious, gives me no Apprehensions; for considering that no Dampness of Air apply'd to the Outside of my Skin can equal what is apply'd to and touches it within, my whole Body being full of Moisture, and finding that I can lie two hours in a Bath twice a Week, covered with Water, which is certainly much damper than any Air can be, and this for Years together, without catching Cold, or being in any other manner disordered by it, I no longer dread mere Moisture, either in Air or Sheets or Shirts. I find it of no Importance to the Happiness of Life the being freed from vain Terrors, especially of objects that we are every day exposed inevitably to meet with. You physicians have of late happily discovered, after a contrary Opinion had prevailed some ages, that fresh and cool Air does good to Persons in the Small-Pox and other Fevers. It is to be hoped that in another Century or two we may find out that it is not bad even for People in Health. And as to Moist Air, here I am at this present Writing in a Ship with about 40 Persons who have no other but Moist Air to Breathe for six Weeks past; everything we touch is damp and nothing dries, yet we are all as healthy as we should be on the mountains of Switzerland, whose Inhabitants are not more than those of Bermuda or St. Helena Islands. Islands on whose Rocks the Waves are dashed into Millions of Particles which fill the Air with Damp, but produce no Distemper, the Moisture being pure, unmixed with poisonous Vapours arising from Marshes and stagnant Pools, in which many Insects die and corrupt the Water. These Places only, in my Opinion (which however I submit to yours) afford unwholesome Air; and that it is not the mere Water contained in the Damp Air, but the volatile Particles of corrupted animal matter mixed with that Water, which renders such air Pernicious to those who breathe it. And I imagine it a Cause of the same kind that renders the Air in a close Room where the perspirable Matter is breathed over and over again by a number of assembled People so hurtful to Health. After being in such a Situation, many find themselves affected by the *Febricula* which the English alone call a *Cold* and perhaps from the Name imagine that they caught the malady by going out of the Room, when it was in fact by being in it.

Thus it will be seen that Franklin was an advocate of fresh air not only for sick people but also for well people; and that he clearly pointed out the contagiousness of colds and that he stated clearly every important factor concerning them, and *almost* mentions micro-organisms. He mentions the value of the prolonged bath, he having invented an arrangement by which he could rest in it and read a book. So certainly he would not be surprised today if he saw we physicians fully apprise the value of fresh air, recognize the contagiousness of colds, the importance of hydrotherapy and the value of the prolonged or continuous bath now so commonly used in the treatment of mental disease.

As is well known, Franklin invented the bifocal spectacles. He devised a flexible catheter which is of great value and he made experiments on the use of pokeweed in the treatment of cancer. He used static electricity for the relief of paralysis. He gives a most interesting account of this treatment and writes:

Some years since, when the newspapers made mention of great cures performed in Italy and Germany, by means of electricity, a number of paralytics were brought to me from different parts of Pennsylvania, and the neighboring provinces, to be electrised, which I did for them at their request. My method was to place the patient first in a chair, on an electric stool, and draw a number of strong sparks from all parts of the affected limb or side. Then I fully charged two six gallon glass jars, each of which has about three square feet of surface coated; and I sent the united shock of these through the affected limb or limbs, repeating the stroke commonly three times each day. The first thing observed, was an immediate greater sensible warmth in the lame limbs that had received the stroke, than in the others; and the next morning the patient usually related that they had in the night felt a pricking sensation in the flesh of the paralytic limbs; and would sometimes shew a number of small red spots, which they supposed were occasioned by those prickings. The limbs too, were found more capable of voluntary motion and seemed to receive strength. A man, for instance, who could not the first day lift the lame hand from off his knee, would the next day raise it four or five inches, the third day higher; and on the fifth day was able, but with feeble languid motion to take off his hat. These appearances gave great spirits to the patients and made them hope a perfect cure; but I do not remember that I ever saw any amendment after the fifth day; which the patients perceiving, and finding the shock pretty severe, they became discouraged, went home and in a short time relapsed; so that I never knew any advantage from electricity in palsies that was permanent. And how far the apparent temporary advantage might arise from the exercise in the patient's journey and coming daily to my house, or from the spirits given by the hope of success, enabling them to exert more strength in moving their limbs, I will not pretend to say.

How many physicians of the present day, employing a new or novel remedy, observe the caution shown by Franklin in this letter? The "spirits given by the hope of success," if recognized by physicians as well as it was by Franklin, would save us from many therapeutic follies. The calm, judicial manner in which Franklin gives his account of these electric experiments might well serve as an admirable pattern for the medical investigator and essayist of today.

Franklin did much to further the cause of inoculation against smallpox. In 1759 a joint pamphlet was published by Benjamin Franklin and Dr. William Heberden of London, the object of which was to diffuse in the colonies a correct understanding of inoculation and its advantages. Dr. Heberden's part of the pamphlet consisted in "Plain instructions for Inoculation in the small-pox by which any person may be enabled to perform the operation and conduct the patient through the distemper." The pamphlet was entitled: "Some account of the success of inoculation for the small-pox in England and America. Together with plain instructions by which any person may be enabled to perform the operation, and conduct the patient through the distemper."

In 1784 the king of France appointed Franklin one of the commission to investigate mesmerism. This commission consisted of four physicians, Borie, Sallin, D'Arcet and Guillotin, and five members of the Royal Academy, Franklin, Le Roy, Bailey, Beborry and Lavoisier.

The investigations of this commission were painstaking and thorough, covered a period of six months, and resulted in completely exposing Mesmer as an arch humbug and driving him finally from Paris.

Tourtourat, a pupil of Gilles de la Tourette, says that this report was pronounced by his master "a scientific work of the first order, worthy of being consulted even today by those interested in hypnotism and in diseases of the nervous system."

Franklin made investigation as to the causation of lead poisoning which is interesting and instructive and shows to great advantage Franklin's great powers of observation and clear reasoning and should be read by every physician.

Franklin's rules of health and long life and his rules of finding out "a fit measurer of meat and drink" may today be used as a guide by the laity. As is well known, he took a great interest in swimming and became an expert swimmer himself. He tells us that he once thought of making the teaching of swimming his life work. He fully recognizes the

value of outdoor exercises. These things he has written on fully, clearly and entertainingly.

But as a contributor to medicine we are chiefly indebted to Franklin for his clear recognition of the value of fresh air, the contagiousness of colds, and the value of water. These together constitute an advance and forward movement in the history of the healing art; and it may be doubted whether any physician of his time has made contributions of equal value. Please do not allow any one in the future to call Ben Franklin archaic!

THEODORE DILLER, M.D., Pittsburgh.

Medical Supervision of Young Persons Engaged in Athletics

To the Editor:—For months, in THE JOURNAL and other magazines, there have occasionally appeared articles dealing with the untoward and serious effects of strenuous physical exercise, especially in regard to the heart of the adolescent boy who indulges in such games as basketball, football, etc. Cases have been cited to prove these statements, and thus naturally lead the uninitiated to regard those engaged in the supervision of such games as not using ordinary care and intelligence in safeguarding our young men and boys from overtaxing their peculiar cardiovascular systems.

The Public Athletic League of Baltimore examines as a routine the young men and women who partake of its activities, noting especially the heart condition of those who follow the most active sports. In 8,656 young men (with duplications) examined during the last twenty months, eighty-six, or 0.97 per cent., showed an organic cardiac defect sufficient to exclude them from the more vigorous games. Their parents were notified of their condition, and referred to the family physician or dispensary for further advice and treatment. From time to time an occasional individual is found who has signs of anemia, hemic heart, or transient dilatation with tachycardia. Such as these are barred temporarily from active work. What appears to be of paramount importance is the fact that 93.02 per cent. of the defective hearts were discovered in youths at their first examination. Young men who have been active in from one to ten indoor seasons of basketball showed the other 6.98 per cent. defective. Of the four cases found, one had a history of recent gonorrheal infection, another of recent rheumatic fever, and the other two were individuals who had come to us from local preparatory schools where there are no physicians to examine the boys who play on their football, basketball, baseball, crew or track teams. Can we say that an earlier examination of the last two would not have shown a cardiac lesion?

The cases cited in the papers which have come to my attention seem to be sporadic and occur in those individuals who are not under the ordinary supervision of physicians specializing in this phase of their profession.

In consideration of the facts noted above, I believe that the hard, fighting games of youth do not inflict organic conditions on those who are in ordinary physical condition; that the cases noted appear in youths who are not under proper medical supervision, and that it is a serious blunder to allow young persons to indulge in physical exercise without proper assurance from a physician that they are organically fit to follow their athletic inclinations.

ALFRED W. BROWN, M.D., Baltimore,
Medical Supervisor, Public Athletic League.

Our Former Great Men

To the Editor:—I had occasion some days since to call attention to the use of the word which served to perpetuate the name of Captain Shaddock for our commonly called grapefruit. Now your reporter, noting the recent meeting here of the Massachusetts Medical Society, calls the lecture delivered annually in honor of Prof. George Cheyne Shattuck "the Shadduck Lecture" (THE JOURNAL, June 26, 1915, p. 2146).

The other day I also called to mind the advice of Professor Bowditch to open the abdomen of one suspected of "typhoenteritis." He who did thoracentesis without *asepsis*. This generation should be reminded of our former great men!

EDMUND D. SPEAR, M.D., Boston.

Value of the Luetin Test

To the Editor:—I was glad to read your editorial on this subject in THE JOURNAL, June 19, 1915, p. 2068. It is very timely. Mention, however, was not made of the fact that the sensitiveness of this test is materially enhanced by first subjecting the patient to a week or ten days of mixed treatment. When this is done it is more valuable in late tertiary and hereditary cases than the most sensitive Wassermann.

HENRY FARNUM STOLL, M.D., Hartford, Conn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TYPHOID VACCINES AND SERUMS FOR TREATMENT

To the Editor:—Is the use of typhoid serums as advertised by our commercial biologic laboratories in the treatment of acute typhoid fever justified by experience? I know that typhoid immunization is an established fact and I accept that.

W. W. JARRELL, M.D., Thomasville, Ga.

ANSWER.—The Council on Pharmacy and Chemistry holds that experience has failed to show the value of serums in the therapy of typhoid (Reports of the Council on Pharmacy and Chemistry, 1914, p. 135), and no longer includes these in New and Nonofficial Remedies.

New and Nonofficial Remedies states that, while typhoid vaccine is of recognized utility in the prevention of typhoid fever and is also of service in the treatment of typhoid carriers, "the use of vaccine in the treatment [curative as distinguished from prophylactic] of typhoid fever has given very inconclusive results. No positive evidence of harm resulting from its use has been recorded. Many clinicians, however, believe that the giving of an additional amount of the toxin of the disease may turn the balance against recovery in states characterized by marked toxemia."

A recent review of the subject in THE JOURNAL (June 26, 1915, p. 2139) discussed the clinical trials with various typhoid vaccines. This indicated that typhoid vaccines often favorably influence the course of the disease, and that, used with discretion, they do no harm.

HEART BLOCK

To the Editor:—What are the cardinal symptoms of heart block? What is the etiology and what treatment is most generally recommended?

C. A. L.

ANSWER.—Complete heart block is due to pathologic changes affecting the system of fibers whose function it is to convey from the auricles the stimulus which causes normal ventricular contraction. Gummas, calcified plaques, or tumors may press on or invade that part of the auriculoventricular conducting system known as the bundle of His. Fibrosis, fatty degeneration, infarcts and inflammatory changes occurring in the bundle of His and perhaps other portions of the conducting system may also produce heart block. Incomplete heart block, in which the relation of auricular to ventricular rhythm is partially retained, may be due to less extensive changes in the auriculoventricular system, resulting from acute infections such as pneumonia, diphtheria, rheumatism, typhoid fever or sepsis; from lesions of the medulla oblongata or vagus, and from overdosage with digitalis. It is probable that many deaths in acute infections are due to some form of heart block, and are caused by inflammatory swelling of the fibers of the auriculoventricular system.

Patients with heart block may present no symptoms except slow pulse and independent rhythm of auricles and ventricles. This difference in rhythm is determined by comparing the number of pulsations of the jugular veins per minute, as

observed in the neck, with the radial pulse or the ventricular beat as made out at the heart. Syncopal attacks, completing the picture of the Adams-Stokes syndrome, may occur at the onset of complete heart block or at any time after this condition has become established.

If during a syncopal attack, the ventricles remain inactive for from fifteen to twenty seconds, muscular twitchings simulating an epileptiform seizure occur. If the ventricles are inactive for much longer than twenty seconds, death generally results. In some cases of complete heart block in which the ventricles beat with their own slow rhythm, independently of the auricles, the syncopal attacks may be absent for many years.

Antisyphilitic treatment will greatly improve or cure those cases of heart block which are syphilitic in origin, in which the conducting system has not been completely destroyed. A Wassermann test should, therefore, always be made. In cases due to other causes, drug treatment offers relatively little. Digitalis, since it tends to slow still further the ventricular rate, should be withheld except in cases of long standing which have become decompensated owing to myocardial disease. Atropin may be used in the attack, but many who have given special study to the action of drugs in these cases question its value. Rest is important, especially in the cases occurring during acute infections.

FORMATION OF VAGINA OUT OF RECTUM

To the Editor:—In THE JOURNAL, July 18, 1914, p. 285, there is an abstract of an article on "Formation of Vagina out of Rectum." Cases of closed vagina are not infrequent here. They are often the result of the patient having put in Chinese medicine; sometimes they result from the handling they get from the native midwives, and occasionally they are congenital. I should be very glad if the technic of the operation could be printed in THE JOURNAL. Have American gynecologists done it much, and with good results?

CATHERINE C. YOUNG, M.D., Manchuria, China.

ANSWER.—The following is a list of articles on this subject:

Halban, J.: Formation of Vagina Out of Small Intestine, *Wien. klin. Wchnschr.*, Dec. 7, 1911.

Stoeckel, W.: Improved Technic for Making Vagina from Loop of Ileum, *Zentralbl. f. Gynäk.*, Jan. 6, 1912; abstr., THE JOURNAL, Feb. 10, 1912, p. 431.

Schubert, G.: Formation of Vagina Out of Part of Rectum, Second and Third Cases, *Zentralbl. f. Gynäk.*, Feb. 17, 1912.

De Bons, R.: Formation of Artificial Vagina from Loop of Intestine, *Semaine méd.*, April 3, 1912; abstr., THE JOURNAL, May 4, 1912, p. 1404.

Fliedl: Formation of Artificial Vagina, *Zentralbl. f. Gynäk.*, June 15, 1912.

Juvara, E.: Technic for Making Artificial Vagina, *Rev. de gynec.*, May, 1912; abstr., THE JOURNAL, July 13, 1912, p. 150.

Schubert, G.: Artificial Vagina Made from Rectum, *Zentralbl. f. Gynäk.*, Aug. 24, 1912.

Henkel, M.: Formation of Vagina Out of Small Intestine: Two Cases, *Deutsch. med. Wchnschr.*, Nov. 21, 1912.

Gregoire, R.: Technic for Formation of New Vagina, *Arch. gén. de chir.*, December, 1912.

Tucker, E. F.: Case of Absence of Vagina and its Reconstruction, *Northwest Med.*, January, 1913.

Quenu, E., and Schwartz, A.: Formation of Vagina, *Rev. de chir.*, June, 1913.

Bonney, V.: Formation of Artificial Vagina by Transplantation of Portion of Ileum (Baldwin's Operation), *Lancet*, London, Oct. 11, 1913.

Ruge, E.: Formation of New Vagina from Sigmoid Loop, *Deutsch. med. Wchnschr.*, Jan. 15, 1914.

Anderes, E.: Formation of Artificial Vagina, *Beitr. z. Geburtsh. u. Gynäk.*, 1914, XIX, No. 2.

Boldt, H. J.: Two Cases of Formation of Artificial Vagina by Intestinal Transplantation, *Am. Jour. Obst.*, March, 1914.

Strassmann, P.: Formation of Vagina Out of Rectum, *Ztschr. f. Geburtsh. u. Gynäk.*, 1914, LXXVI, No. 1; abstr., THE JOURNAL, July 18, 1914, p. 285.

Schubert, G.: Concerning Formation of New Vagina in Case of Congenital Vaginal Malformation, *Surg., Gynec. and Obst.*, September, 1914.

SABOURAUD'S GLUCOSE AGAR

To the Editor:—In THE JOURNAL, June 5, 1915, p. 1894, in an article on the "Relation of the Genus 'Monilia' to Certain Fermentative Conditions of the Intestinal Tract in Porto Rico," Ashford says, "Up to the present, since October, 1914, I have made cultures in Sabouraud's glucose agar, 4 per cent., plus 2." How is this reagent made?

THOMAS TRUELSEN, M.D., Tampa, Fla.

ANSWER.—Sabouraud's glucose agar has the following formula:

Water	1,000 c.c.
Peptone	10 gm.
Crude glucose	40 gm.
Agar	18 gm.

This mixture is prepared in the usual way, and is adjusted so that it has an acidity of 2+ for the usage such as Ashford describes.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: New Haven, July 13. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven; Eclectic: New Haven, July 13. Sec., Dr. T. S. Hodge, 19 Main St., Torrington; Homeopathic: New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 13-15. Sec., Dr. W. T. Gott, 120 State House, Indianapolis.

MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEW MEXICO: Santa Fe, July 12. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, July 13. Sec., Dr. Ralph B. Smith, 502 Daniel Bldg., Tulsa.

SOUTH DAKOTA: Pierre, July 12. Sec., Dr. Park B. Jenkins, Wauhay.

New Mexico April Report

Dr. W. E. Kaser, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fé, April 12-13, 1915. The total number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. One candidate was licensed through reciprocity and 8 on satisfactory credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Barnes Medical College		(1911)	78.7
Chattanooga Medical College		(1899)	78.8
Southwestern University		(1910)	80.7

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chattanooga Medical College		(1906)	Tennessee

College	LICENSED ON CREDENTIALS	Year Grad.	Total No. Licensed
Denver and Gross College of Medicine		(1904)	1
Hahnemann Medical Coll. and Hosp., Chicago		(1912)	1
Keokuk Medical College		(1906)	1
Univ. of Michigan, Dept. of Med. and Surg.		(1910)	1
St. Louis College of Physicians and Surgeons		(1905)	1
Vanderbilt University		(1893)	1
National School of Medicine, Mexico		(1911)	2

Massachusetts May Report

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, May 11-13, 1915. The total number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 60, of whom 30 passed, including 5 nongraduates and 1 osteopath, and 30 failed, including 17 nongraduates and 3 osteopaths. The following colleges were represented:

College	LICENSED ON CREDENTIALS PASSED	Year Grad.	Per Cent.
Yale Medical School		(1910)	79.6
Georgetown University		(1912) 75; (1914)	76.9
Baltimore Medical College		(1911)	77.1
College of Physicians and Surgeons, Baltimore		(1914)	75
Johns Hopkins University		(1911)	78.3
College of Physicians and Surgeons, Boston		(1913)	76.5
Harvard University		(1908) 80.9; (1912) 76; (1913) 78.9; (1914)	76.5, 80.6, 81.6
Tufts College Medical School		(1912) 75; (1913) 75; (1914)	78.9
Jefferson Medical College		(1912)	80.3
Temple University		(1911)	78.8
University of Pennsylvania		(1912)	81.9
University of Vermont		(1910) 79.5; (1914)	75.7
University of Paris		(1914)	77.5
Royal Hungarian Franz-Joseph University		(1894)	75
Imperial Kasanskij University, Kazan, Russia		(1906)	77.1
Nongraduates		82.5, 80.7, 80.4,	75, 75

College	FAILED	Year Grad.	Per Cent.
Maryland Medical College		(1912) 65.9; (1913)	64.7, 64.9, 71.7
Eastern University*		(1914)	61.6
College of Physicians and Surgeons, Boston		(1911)	66.9
Tufts College Medical School		(1913)	70.2
Jefferson Medical College		(1912)	†

University of the South	(1902)	63.3
University of West Tennessee	(1913)	62.5
Nongraduates		73.4, 72.7, 72, 71.2, 70.9, 70.3, 70.2, 70, 68.7, 68.2, 61.7, 59.3, 56.3, 51.9, 49.3, 47.5, 42.9

* This college is officially reported as not recognized by the Maryland State Board of Medical Examiners.

† Examination not completed.

Maryland Homeopathic June Report

Dr. O. N. Duvall, secretary of the Maryland Homeopathic Board of Medical Examiners, reports that at the written examination held in Baltimore, June 14-15, one candidate, a graduate of the New York Homeopathic Medical College and Flower Hospital, 1914, passed with an average of 81.4. One candidate, a graduate of the Pulte Medical College, 1897, was licensed through reciprocity with Ohio.

Book Notices

DOCTORS VERSUS FOLKS. By Robert T. Morris, M.D. To-Morrow's Topics Series. Cloth. Price, $2 net. Pp. 365. Garden City, N. Y.: Doubleday Page & Co., 1915.

MICROBES AND MEN. By Robert T. Morris, M.D. To-Morrow's Topics Series. Cloth. Price, $2 net. Pp. 339. Garden City, N. Y.: Doubleday Page & Co., 1915.

A SURGEON'S PHILOSOPHY. By Robert T. Morris, M.D. To-Morrow's Topics Series. Cloth. Price, $2. Pp. 391. Garden City, N. Y.: Doubleday Page & Co., 1915.

These books contain a number of thoughts which have been expressed on various occasions by the author. The work is essentially philosophic in nature; in fact, it must be considered as expressing the observations of a modern medical onlooker of the passing show. The observations seem to follow no definite outline, but leap here and there, touching art, literature, science or economy, as the author's attention has been diverted from one social subject to another. The books are entertaining. In books of such character, it is obvious that no reader will be in complete agreement with all the sentiments of the author, who seems given to the formulation of epigrams. The motto of the books is, "When men smile and agree, progress weeps."

UEBER DIE BILDUNG DER HARN- UND GALLENSTEINE. Von Professor Dr. L. Lichtwitz. Paper. Price, 3.60 marks. Pp. 81 with 26 illustrations. Berlin: Julius Springer, 1914.

This monograph opens with a concise discussion of the physical and chemical principles which determine the solution and precipitation of those substances which form urinary and biliary calculi. There then follows a discussion of the same principles as applied to the special cases of urinary and biliary calculi. Particular emphasis is laid on the importance of the colloid substances which form the framework of the calculi, and which are maintained to be fundamentally active in both their origin and growth. The colloids presumably concentrate on the surface of any nucleus present, until they form a veritable membrane, which becomes saturated with salts; this new layer provides another surface on which colloid concentration occurs, and so the calculus is formed of laminae. As the title indicates, only the formation of calculi is discussed: their results and treatment are not considered. There are excellent illustrations, and the monograph constitutes an important contribution in the field which it covers.

FIELD HOSPITAL AND FLYING COLUMN. Being the Journal of an English Nursing Sister in Belgium and Russia. By Violetta Thurstan. Cloth. Price, $1. Pp. 183. New York: G. P. Putnam's Sons, 1915.

This is an entertaining narrative by an English nurse of her experience as a nurse in Belgium at the outbreak of the European war, as a German prisoner of war, and later with the Russian Red Cross in East Prussia and Russian Poland. Naturally there is some bias, but the author tells her story clearly and well, and gives excellent pen pictures of her work, companions and environment.

Miscellany

Improved Water Supply and Typhoid

Previous to September, 1913, Cumberland, Md., had an unusually high typhoid rate, running in 1910 to 568 and in 1913 to 472. In the latter year after the installation of a new water supply improvement began immediately, and in 1914 the number of cases had fallen to sixty-one in spite of the fact that suburbs had been annexed to the city in which the new water supply was not available and cisterns and wells were still in use. The water formerly had been taken from the Potomac river, and the growth of population above the intake and the increase in manufacturing plants had rendered the water unfit for use. Writers in the *Engineering News* for May 20 describe the new water plant of the city and show the radical reduction in typhoid fever after its installation. The water is now taken from Lake Gordon, formed by the damming of Evitts creek, and is first treated with hypochlorite, and with alumina when necessary to clear it, and then passed through six gravity mechanical filters made up of coarse gravel and then fine gravel or sand and lastly 5 feet of broken-up anthracite coal. After the adoption of the commission form of city government and the appointment of a full-time health officer in 1910 efforts were started to improve the health conditions of the city, the installation of the water plant with the drop in the death rate from typhoid being only one of the measures producing gratifying results. The general death rate has also steadily declined from 19.05 in 1910 to 13.45 in 1914.

Defense of Spain Against Yellow Fever

The *Medicina Contemporanea* says that the Spanish authorities have at last found out the reason why some vessels arriving with yellow fever cases on board become sources of infection while others do not. This discovery is the result of study of the mosquitoes frequenting the various ports where the vessels land. It was found that the quarantine station and hospital at Vigo seems to be entirely free from the *Stegomyia fasciata*, the yellow fever mosquito, while numerous specimens were found at Mahon, the other quarantine station. More than once there have been a number of cases of yellow fever among the personnel at the latter quarantine station, following the arrival of ships with cases on board. Henceforth all ships subject to sanitary measures on account of yellow fever are to be directed to the quarantine station at Vigo and not be allowed to proceed to Port Mahon. The latter is on one of the Balearic islands, southeast of the mainland of Spain, while Vigo is in the northwestern corner of Spain, not far north of Portugal.

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Bozeman, July 14-15.
Washington State Medical Association, Tacoma, July 20-22.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirtieth Annual Meeting, held at Washington, D. C., May 11-13, 1915

(*Concluded from page 134*)

Condition of Patients After Partial or Complete Resection of the Colon

DR. J. C. BLOODGOOD, Baltimore: As to immediate results: in resection for local disease, the patients are apt to have diarrhea for a few months; in resection for the general condition (the remaining colon being abnormal), there is no diarrhea. In local disease cases, bladder irritation accompanies the diarrhea and disappears with it. Bladder irritation does not occur after resection in the atonic cases. Cases in

which the operation was done for local disease have never come for secondary operation. When resection was undertaken for the atonic disease, the same technic which had been satisfactory formerly was chosen in the first cases. Out of twenty-eight cases of the atonic type, sixteen patients are well. They have gained weight, require no cathartics, and have no indigestion, no adhesion pains, etc. The convalescence is slow (it is rapid after ulcer and cancer cases), and may require two years. The majority of the patients are women, and are able to do their own housework. After four years' observation of resection in cases of atonic disease, and seven years' observation of local disease cases, it is evident that removing the right colon does no harm. Of the atonic cases, seven were failures in that they had postoperative discomfort and pain. Reoperated cases indicate that the failures were due to the use of side-to-side anastomosis; the two blind extremities become tense and painful diverticuli; this does not happen in ulcer and cancer cases. In the last three cases, end-to-end anastomosis has been employed. That resection has an effect on the atony is shown by a case in which there was vomiting, with food retention in the stomach and stasis in the colon; eighteen months after the operation there was no vomiting, and there was hypermotility of stomach and colon. All of the atonic cases had been referred by medical colleagues; all had been treated thoroughly; all other means of relief had been tried and had failed. All of the sixteen successful cases are much improved; but the patients are not robust. Their atony is a terminal condition which might have been prevented by proper medical treatment.

DISCUSSION.

DR. WALTER B. CANNON, Boston: The material coming from the small intestine to the colon is almost wholly water and waste. The colon may be regarded as a waste receptacle. The bulk of the waste is reduced by the removal of water and is accomplished by reversed peristalsis, the water being thrown back into the caput coli, where it is absorbed. Material in the upper colon is nearly as dry as that in the rectum. This reversed peristalsis may also be seen in the left colon, being excitable there by the presence of soft material. Hardening of the feces excites peristalsis toward the rectum. So far as the physiologic functions of the right colon are concerned, they can be assumed by the transverse and left colon. Animals that are weak and toneless as to skeletal muscles have an equal tonelessness of the smooth muscles. Was the atonic state of the colon in Dr. Bloodgood's patients an expression of a general tonelessness of the body?

DR. S. J. MELTZER, New York: We do not yet know all about the colon. We do not know enough about the eliminative power of the colon, and we do not know yet that it has no function beyond carrying away waste material.

DR. A. JACOBI, New York: I have always seen that atony of the colon is due to chronic constipation with colitis, thickening and local dilatations. Surgeons will find these changes if they will examine the colon low down.

DR. J. C. BLOODGOOD, Baltimore: The patients of the atonic group were very toneless throughout the whole body. Eight cases had local disease of the colon, posttyphoid or postappendical. None of them had exophthalmic goiter; none had rheumatoid arthritis; two had tuberculosis of the lungs; none had heart disease; it may be seen, therefore, that the operation was not done for these conditions. I have excluded colitis from the group. In none of the cases was there a history of mucous diarrhea or dysentery, and proctoscopy showed the left colon to be normal. These cases have very thin colon walls, instantly recognizable from the dilated colon above the cancer and from Hirschsprung's disease. I believe that this atonic state is a terminal preventable disease. We can remove only part of the enormous dilated sac of the colon; a big incision is necessary to remove the cecum.

Fate of Fats in the Blood Stream

DR. WILLIAM CHARLES WHITE, Pittsburgh: Light fats were injected into the blood stream in an effort to learn why tubercle bacilli lodge preferably in the upper lobes of the lungs. Cream was injected into the ear vein of rabbits. It is rapidly set aside into the lymphatics and concentrated in the cisterna chyli. There was no evidence that any of the fat was conveyed into any of the organs by the blood vessels. All of the fat is held up in the pulmonary circulation, and it does not get out again into the peripheral circulation. It is found later not only in the depots of fat but also outside the central veins in the lobules of the liver. Suggestion is made of a lymphatic circulation in the liver connected with the cisterna chyli.

Unusual Type of Pulmonary Mycosis

DRS. THOMAS R. BOGGS and M. C. PINCOFFS, Baltimore: The case was one of a mycotic lung infection not heretofore reported in the United States. A native American girl, a corn scraper in a canning factory, sought relief for a boil-like lesion under the arm. She was found to have cancer of the breast on the same side; there were weakness, numbness and tingling of the arm, and evidences of circulatory obstruction in the axilla. Operation for breast cancer and the axillary condition was done; no evidence of pulmonary disease was noticed. Later she entered the city hospital febrile, prostrated and with profuse expectoration of sputum resembling that from liver abscess. In the sputum were found mycelium and spores. The course was rapidly downward; on the fifth day hemoptysis occurred, cough ceased and later hemorrhage from the axillary sinus marked the end. Necropsy revealed a cavity communicating with the pleura and sinus; the lung was in organized gray hepatization. The organism grew abundantly on culturing and was found to be a moniliform yeast. It is pathogenic to animals when inoculated and when given intratracheally, but not when given by mouth. It is easily overlooked in the sputum by ordinary staining methods; it is necessary to culture by the plate method to recover the organism.

The Alleged Relation Between Vaccine Virus and Postvaccination Tetanus

DR. JOHN F. ANDERSON, Washington, D. C.: Since 1902, the Public Health Service has supervised the manufacture of and commerce in biologic products. Among other things, it has conducted an investigation of the occurrence of tetanus following vaccination. Since 1904, I have studied this subject. There were four lines of study: 1. Study of actual cases, by personal investigation or by a delegated officer, with collection of data on incubation period, kind and source of virus used, collateral circumstances, etc. Forty-one cases of postvaccination tetanus were studied. In no cases were tetanus spores found in virus from the same stock as that used for the vaccinations. The incubation time was from nine to twenty days; the mortality was about 75 per cent. The mortality was less in cases with incubation time of ten days. 2. The incidence of tetanus among large groups vaccinated at the same time; army, navy, etc. 3. Examination of commercial vaccines for the presence of tetanus bacilli or spores. Examination was made of enough virus to vaccinate in 200,000 cases. In no single instance was tetanus found. Among 385,000 persons vaccinated in U. S. Army there were six cases of tetanus, none of which had any relation to the vaccination. Among 200,000 persons vaccinated in U. S. Navy there were two cases of tetanus having no relation to vaccination. 4. Laboratory observations on animals vaccinated with virus infected with tetanus. Animals were vaccinated with virus containing large numbers of tetanus spores. Rhesus monkeys and guinea-pigs, animals susceptible to both vaccine and tetanus. All escaped tetanus, although the vaccination crusts sometimes contained spores. This fact leads to the belief that there is no danger even if virus does contain spores. The following conclusions may be made: 1. Vaccine virus on the market does not contain tetanus spores. 2. Tetanus following vaccination depends on accidental infection at the time of crust formation.

Child Labor Legislation.—Nearly every state in the Union has on its statute books today a mass of legislation for the welfare of children. Some of it is archaic; some is extreme; and not a little contradictory and unenforceable.—Clupper.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Albany (N. Y.) Medical Annals

June, XXXVI, No. 6, pp. 267-316

1 Wassermann Reaction. W. B. Stone, Schenectady.
2 Technic of Lindeman's Blood Transfusion. A. Krida, Albany.
3 Definition of Insanity. C. Stover, Amsterdam.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

June, LXXI, No. 6, pp. 881-1055

4 *Clinical Observations on Treatment of Acute Pelvic Inflammations. G. G. Ward, Jr., New York.
5 *Serum Studies in Pregnancy. J. A. Kolmer and P. F. Williams, Philadelphia.
6 Gynecology; Past, Present and Future. W. D. Fullerton, Cleveland.
7 *Fortuitous Origin of Departures from Normal Period of Gestation in Man. T. B. Robertson, Berkeley, Calif.
8 Prolapsus of Uterus. H. J. Boldt, New York.
9 Series of Placenta Praevia Cases. W. E. Caldwell, New York.
10 Value of Modern Functional Kidney Tests to Clinician. F. L. Sondern, New York.
11 *Observations on Two Hundred Twenty-Seven Cases of Ectopic Pregnancy. J. O. Polak, Brooklyn.
12 Case of Ureteral Injury and Its Treatment. W. A. Jewett, Brooklyn.

4. Treatment of Acute Pelvic Inflammations.—Ward made a study of 39 cases of pelvic abscess showing indications for operation. There were 4 deaths. Two cases were failures (that is, they required a subsequent radical abdominal operation, owing to the failure of simple incision and drainage to effect a cure); 1 patient is still convalescing in the hospital; 8 were discharged as cured, but have not been heard from. Thirty-eight of the patients were treated by posterior colpotomy and drainage, and 1 patient was operated on by an extraperitoneal incision above Poupart's ligament, with thorough drainage to the vagina. Tube drainage was employed in 30 cases, and gauze drainage in 9 cases.

Of 7 cases in which pus developed, requiring colpotomy and drainage secondary to an operation, 3 followed extensive abdominal operations for dense adhesions and old purulent adnexa; 2 were due to infection of a blood clot, the result of extensive oozing after operation; 1 followed a trachelorrhaphy performed by a physician in the home under non-aseptic conditions; and one was infected as a result of puncture of the uterus during a curettage. Three patients required a secondary colpotomy owing to the incision being allowed to close too soon. There has been no mortality among the last 24 cases, the 4 deaths occurring among the first 15. All 4 of these cases were profoundly septic when brought to the hospital, as a result of prolonged infection, and the patients died of a general septicemia shortly after the operation. One patient developed multiple abscesses of the lungs, as proved by an necropsy. Pregnancy is known to have occurred in 3 patients since operation.

Ward condemns the too ready resort to the curet, or to other intra-uterine manipulations, as giving rise to uterine infection, and advises that incision and drainage should not be employed until the indications of a localized collection of pus are well defined and associated with evidences of septic absorption. The selection of the proper form of drainage applicable to each case is important. Rubber tubing or gauze should be chosen according to the conditions found at the operation. Failure to cure a pelvic abscess by colpotomy and drainage is nearly always due to neglect in not keeping the incision open sufficiently long. In acute pelvic suppurations, when the indications for interference are present, the operation of choice should be a simple incision and ample drainage, with the object of conserving the organs.

5. Serum Studies in Pregnancy.—A placentin (No. 1) prepared by concentration of expressed placental juice, preserved with 1 per cent. glycerin and 0.5 per cent. tricresol and injected intracutaneously yielded skin reactions characterized by erythema, infiltration and pain, in 87 per cent. of pregnant and recently delivered women, and in 66 per cent. of women who had borne children, but who were not pregnant at the time these tests were made. This extract also caused 20 per cent. of the men tested to react slightly. When diluted 1:10 with normal salt solution this extract yielded 80 per cent. positive reactions among pregnant or recently delivered women, and 50 per cent. positive among women who had borne children. A placentin (No. 4) prepared in the same manner as the first extract except that glycerin was not used in its preparation or preservation, yielded 40 per cent. positive reactions among pregnant or recently delivered women, and 14 per cent. positive reactions among women who had borne children. It is probable that glycerin itself acts as an irritant, especially in the hypersensitive skin of pregnant women.

A placentin (No. 2) prepared from the residue resulting from the concentration of expressed placental juice, yielded 55 per cent. positive reactions among women who were pregnant or recently delivered. This placentin produced slightly positive results in 20 per cent. of the men tested. A glycerin extract (placentin No. 5) on cutaneous inoculation yielded 50 per cent. positive reactions among pregnant and recently delivered women. Of several multiparous and nulliparous women tested, all reacted negatively. Extracts of human male and female kidney (nephrins) prepared in the same manner as the placentins, produced a number of positive reactions. The most marked reactions were observed with the extract of human female kidney. The intracutaneous injections of a 1 per cent. solution of a placental peptone did not produce reactions among pregnant and recently delivered women.

7. Normal Period of Gestation in Man.—From a statistical investigation of 511 normal confinements of South Australian females, comprising 247 confinements yielding male infants and 264 confinements yielding female infants, it is concluded by Robertson that the mean length of periods of gestation yielding males is 282.5 days with a probable error of ± 0.55 days and a variability of 4.47 per cent. The mean length of periods of gestation yielding females is 284.5 days with a probable error of ± 0.57 days and a variability of 4.85 per cent. The probability of the truth of the conclusion, based on the above estimates, that the periods of gestation yielding females are longer than those yielding males is 142:1.

There is only one period, the "normal" period at which the percentage of infants delivered by normal mothers attains a maximum. Subsequent to a very early period in the development of the fetus, there is no evidence of a "critical period" in the intra-uterine growth of man such as occurs in the intra-uterine growth of guinea-pigs. The deviation of normal periods of gestation from the mean are fortuitous in origin. The chances are a million to one against a male child being delivered at the termination of an otherwise normal pregnancy before 224 days or of a female child before 222 days after the onset of the last menstruation. Hence all 7-months children (210 days) may legitimately be regarded as the fruit of pathologic pregnancies. The length of the period of gestation is very much less variable in normal females, than the weight of the infant which is delivered. From this fact it is inferred that the length of the period of gestation in normal females is primarily determined, not by the fetal development, but by a maternal cycle of events which is to a considerable extent independent of the stage of developments attained by the fetus.

11. Observations on Cases of Ectopic Pregnancy.—An analysis of these 227 cases forced Polak to the conclusion that properly diagnosticated ectopics should never reach the tragic stage, for there is no question that an early diagnosis is possible in a great majority of instances. The histories of these cases show that ectopics occur in three classes of women: First, those in which pregnancy has been preceded by a varying period of sterility, in a woman who has been previously the subject of a dysmennorrhea, due to congenital uterine anomaly, with no history of infection; second, in women in whom the tubal lumen has been disturbed by a previous infective process, giving a history since marriage of chronic pelvic inflammatory trouble; and third, in women

who are subjects of rapidly recurring and repeated pregnancies, as may be found among our foreign population, particularly the Jews, Italians and Irish. The largest number of Polak's cases fall within the last two classes. Two hundred and twenty-two of these women presented some menstrual anomaly, as a period of amenorrhea, prolongation of the normal period, anomalous character of the bloody discharge, or an anticipated period followed by an intermittent or continuous metrorrhagia. This vaginal discharge, which is irregular in occurrence and amount, has presented definite characteristics, it is brownish red blood, mixed with mucus, which does not clot, its quantity is increased from time to time, coincident with the painful paroxysms. Pelvic pain was absent in only one patient.

The attacks of pain may be general, abdominal colic, or sharp, colicky pains, referred to the region of the fruit sac, followed by intervals of hours or days of complete remission. Abdominal sensitiveness following the paroxysms of pain has been noted in every one of the cases observed. An analysis of these histories shows that metrorrhagia or menstrual anomalies with pain were constantly present in over 98 per cent. of the cases before final rupture, hence Polak feels that with certain pelvic signs, which are always more or less available to establish the presence or absence of a pregnancy, that it is possible for a diagnosis to be made. The signs he refers to are: The dusky hue of the cervix, the slight softening of the cervix, and the enlargement of the uterus without any of the characteristic changes in shape and consistency found in normal pregnancy. A mass or tumor was present in every instance. It was found either on one or the other side of or in front or behind the uterus, always displacing it to some degree. This mass had more or less definite characteristics. It was tense, tender and the pulsation of the uterine artery on the side corresponding to the mass was always more marked.

Arizona Medical Journal, Phoenix

May, III, No. 5, pp. 6-16

13 Electrotherapeutics in Tuberculosis. W. W. Wilkinson, Phoenix.

Arkansas Medical Society Journal, Little Rock

June, XII, No. 1, pp. 1-33

14 Green Fly (Lucilia Caesar) as Universal Destroyer of Motor Function and of Life. E. W. Saunders, St. Louis.

Boston Medical and Surgical Journal

June 24, CLXXII, No. 25, pp. 925-956

15 Water Drinking. E. G. Cutler, Boston.
16 Endorsement of Starvation Method vs. Gradual Carbohydrate Reduction as Time Saver in Treatment of Diabetes. H. A. Christian, Boston.
17 Psychopathic Hospitals and Prophylaxis. F. E. Williams, Boston.
18 Program and Directions for Mental Examination of Asocial, Psychopathic and Doubtful Subjects. R. S. Hardwick, Boston.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

June, VII, No. 12, pp. 167-189

19 Treatment of Infantile Paralysis. R. W. Lovett, Boston.

California State Journal of Medicine, San Francisco

June, XIII, No. 6, pp. 211-250

20 Morphin-Scopolamin Anesthesia in Obstetrics. L. I. Breitstein, San Francisco.
21 Possible Explanation of Conflicting Reports on Twilight Sleep. S. Lehr, Berkeley.
22 Observations on Dammerschlaf or Twilight Sleep. B. F. Sandow, Oakland.
23 Silver Iodid Emulsion in Pyelography. L. J. Roth, Los Angeles.
24 Case of Sympathetic Ophthalmia. C. S. G. Nagel, San Francisco.
25 *Some Experimental Data on Morestin Treatment of Peritonitis. S. Pope, San Francisco.
26 Streptococcic Infections. J. L. Robinson, Reno, Nev.

25. **Data on Morestin Treatment of Peritonitis.**—To determine the value of this method experimentally, a series of twelve rabbits were used by Pope, two of which were controls. Eight were treated as follows: Under general anesthesia the animal was laparotomized, the colon drawn out, an inch incision made in the viscus, a portion of its contents smeared over the peritoneum. The intestinal wound was closed with silk, the peritoneum gently swabbed with sponges soaked in ether, a dram of ether poured into the cavity, the colon returned, and the abdominal incision closed with silk. All of these rabbits developed a vicious peritonitis marked by hemorrhagic plastic deposits, purulent exudate and agglutination of the intestinal loops. Six died within a few days—from sepsis or obstruction. Two remain at the end of ten days in fair health, but show multiple peritoneal adhesions. Two other rabbits were opened, a dram of ether poured in the abdomen and the wound closed. Each developed a purulent peritonitis, one died the third day, the other died from a secondary anesthesia, at which time cultures were made and proved positive to *Staphylococcus aureus*. This shows that a sterile abdominal cavity, insulted by an irritant such as ether, is not capable of defense against its own intestinal flora. Two control rabbits were laparotomized, had their peritoneums soiled by a colotomy wound, were washed with salt solution and closed. These made an uneventful recovery and at necropsy presented a fairly normal peritoneum. These few experiments show rather conclusively that for rabbits, at any rate, whether or not the peritoneum be infected, to treat it with ether is a highly improper procedure.

Colorado Medicine, Denver

June, XII, No. 6, pp. 137-170

27 Vomiting of Infants. H. P. Kirtley, Salt Lake City.
28 Infant Feeding by Simple Dilutions. G. M. Anderson, Denver.
29 Congenital Stenosis of Pylorus. F. N. Cochems and A. J. Bender, Salida.
30 Creosotal in Treatment of Pneumonia. H. B. Whitney, Denver.
31 Irritative States of Gastric Motility. J. L. Mortimer, Denver.
32 Eczema of Auricle Due to Excess of Carbohydrates in Diet. W. C. Bane, Denver.
33 Pleurisy with Purulent Effusion in Infant (Two Months Old). F. B. Stephenson, Marble.
34 Heredity and Defectives. C. T. Knuckey, Lamar.

Florida Medical Association Journal, Jacksonville

June, I, No. 12, pp. 353-382

35 Surgery of Today; Its Ideals and Its Activities. G. R. Holden, Jacksonville.

Journal of Biological Chemistry, Baltimore

June, XXI, No. 2, pp. 223-509

36 Influence of Balanced and Non-Balanced Salt Solutions on Osmotic Pressure of Body Liquids of Fundulus. J. Loeb and H. Wasteneys, New York.
37 *Relation of Quality of Proteins to Milk Production. E. B. Hart and G. C. Humphrey, Madison, Wis.
38 Estimation of Phosphorus in Biologic Material and Standardization of Solutions of Molybdenum. A. E. Taylor and C. W. Miller, Philadelphia.
39 Basal Metabolism and Body Surface. J. H. Means, Boston.
40 Formation of Fats from Proteins in Eggs of Fish and Amphibians. J. F. McClendon, Minneapolis.
41 Oxidizing Power of Oxyhemoglobin and Erythrocytes. J. F. McClendon, Minneapolis.
42 Composition and Physiologic Activity of Pituitary Body of Hogs and Cattle. F. Fenger, Chicago.
43 *Determination of Hippuric and Benzoic Acids in Blood and Tissue. F. B. Kingsbury, Minneapolis.
44 Synthesis of Hippuric Acid in Nephrectomized Dogs. F. B. Kingsbury and E. T. Bell, Minneapolis.
45 Studies on Reductase of Liver and Kidney. Influence of Heat, Light and Radium Radiations on Activity of Reductase. D. F. Harris and H. J. M. Creighton, Halifax, Canada.
46 Relation of Diet to Transmissible Tumors. J. E. Sweet, E. P. Corson-White and G. J. Saxon, Philadelphia.
47 Researches on Purins. New Synthesis of Alkylamino-Purins. On 2-Oxy-8-Thiopurin, 2-Oxy-8-Methylmercapto-Purin, 2-Oxy-8-Methylamino-Purin and 2-Oxy-6, 9-Dimethyl-8-Thiopurin. C. O. Johns, New Haven, Conn.
48 Vividiffusion Experiments on Ammonia of Circulating Blood. A. Rhode, Baltimore.
49 Synthesis of Hippuric Acid in Animal Organism and Occurrence of Free Benzoic Acid in Urine. G. W. Raiziss and H. Dubin, Philadelphia.
50 Walden Rearrangement in Hexoses. P. A. Levene and F. B. La Forge, New York.
51 Xylohexosaminic Acid, Its Derivatives and Their Bearing on Configuration of Isosaccharic and Epi-Isosaccharic Acids. P. A. Levene and F. B. La Forge, New York.
52 *Method for Determination of Chlorids in Small Amounts of Body Fluids. F. C. McLean and D. D. Van Slyke, New York.
53 *Influence of Salicylates on Uric Acid Concentration of Blood. M. S. Fine and A. F. Chace, New York.
54 Metabolism of Creatin and Creatinin. Fate of Creatin When Administered to Man. V. C. Myers and M. S. Fine, New York.
55 Id. Presence of Creatinin in Muscle. V. C. Myers and M. S. Fine, New York.
56 Id. Creatin Content of Muscle of Rats Fed on Isolated Proteins. V. C. Myers and M. S. Fine, New York.

87 Changes in Fat Content of Feces Preserved by Freezing Without Addition of Preservative. C. A. Smith, R. J. Miller and P. B. Hawk, Philadelphia.
88 Quaternary Salts of Hexamethylene Tetramine. Monohalogenacetyl Derivatives of Amino-Alcohols and Hexamethylene-Tetraminium Salts Derived Therefrom. W. A. Jacobs and M. Heidelberger, New York.
89 Id. Halogenethyl Ethers and Esters and Their Hexamethylene-Tetraminium Salts. W. A. Jacobs and M. Heidelberger, New York.
90 Id. W-Halogen Derivatives of Aliphatic-Aromatic Ketones and Their Hexamethylene-Tetraminium Salts. W. A. Jacobs and M. Heidelberger, New York.
91 Id. Miscellaneous Substances Containing Aliphatically Bound Halogen and Hexamethylene-Tetraminium Salts Derived Therefrom. W. A. Jacobs and M. Heidelberger, New York.
92 *Tissue Fibrinolysins. M. S. Fleisher and L. Loeb, St. Louis.
93 Nature of Sugars Found in Tubers of Sweet Potatoes. K. Miyake, Japan.
94 Nuclein Bases Found in Shoots of Aralia Cordata. K. Miyake, Japan.

37. Quality of Proteins for Milk Production.—Data are presented by Hart and Humphrey on the comparative efficiency of the proteins of milk, corn and wheat grain for milk production. On a nutritive ratio of 1:8, equivalent to about 7 per cent. of digestible protein and 9 to 10 per cent. of total protein, positive nitrogen balances were maintained with milk proteins for the production of as high as 35 pounds of milk per day, but negative balances resulted when the proteins were derived from the corn or wheat grain. During the negative nitrogen balances increased tissue autolysis resulted, and for a brief time at least there was no decrease in the milk protein or milk solids elaborated. The results indicate clearly that the quality of the proteins is an important factor in maintenance and production and that the synthetic powers of the mammary gland will not compensate for deficiencies in protein structure. The fact that negative balances were observed on the 1:8 nutritive ratio of corn or wheat proteins explains the results of experience which has wisely dictated a narrow nutritive ratio for milk production. It was found that milk proteins had an efficiency for milk production and tissue restoration of about 60 per cent., while the corn and wheat grain proteins showed an efficiency of 40 and 36 per cent., respectively. These results were obtained under experimental conditions requiring a roughage of low nitrogen content.

43. Hippuric and Benzoic Acids.—Quantitative methods based on those of Folin and Flanders for the determination of hippuric and benzoic acids have been applied by Kingsbury to blood and tissue analysis. By means of these methods small quantities of these two acids were estimated.

52. Chlorids in Body Fluids.—The authors recently published an iodometric method for determination of halids in general which permits the titration of as little as 5 c.c. of tenth normal halid solution with an accuracy of 1 part per thousand. The present paper gives the conditions for the application of this method to body fluids. As the concentration of chlorid in blood plasma is about tenth normal, it is possible to titrate the amount in 0.5 c.c. with an accuracy of 1 part per hundred. The titration is applicable to urine, ascitic fluid, pleural exudates, gastric juice, etc. The determination requires two steps: (1) removal of proteins by coagulation or by ignition and (2) titration of chlorids. The procedure is described in detail.

53. Salicylates and Uric Acid.—The data obtained by Fine and Chace point to the close resemblance between the action of atophan and salicylates on the uric acid concentration of the blood. In several instances the effect of the latter drug has, if anything, been more pronounced, twice causing an almost complete disappearance of uric acid from the blood, an observation which they have been unable to make in the case of atophan. The authors also made a few observations on the influence of certain other drugs on the uric acid concentration of the blood. In two cases treated with 5.3 gm. of theobromin sodium salicylate daily (one for eleven days and the other for two days) there was, if anything, a slight increase in the concentration of blood uric acid. The same may be said with regard to quinin hydrochlorid (2 gm. per day for two days in one case), and for colchicum (maximum doses in two cases).

62. Tissue Fibrinolysins.—Fleisher and Loeb found that certain organ systems, especially the genito-urinary and nervous systems contain fibrinolysins. Heating organs to 56 C. (132.8 F.) for thirty minutes renders them inactive. Various species of animals differ in the fibrinolytic power of their organs; there also exist great variations in the solubility of different kinds of blood. The liver counteracts the effect of the fibrinolysins. The substances found in certain organs, which inhibit the coagulation of the blood, are perhaps identical with the fibrinolysins. The fibrinolysins have a considerable biologic significance in preventing growth processes; they are antagonistic to the tissue coagulins which promote growth processes. The fibrinolysins do not seem to be identical with those splitting ferments which produce autolysis.

Journal of Outdoor Life, New York

May, XII, No. 5, pp. 148-179

65 Fresh Air in Light of Recent Research. C. E. A. Winslow, New York.
66 Smoke in Its Relation to Health. W. L. Holman, Pittsburgh.
67 Admitting Patients to State Sanatorium; Method of Instructing Physicians in Tuberculosis Problem. H. L. Barnes, Wallum Lake, R. I.
68 To Which Type Do You Belong? D. W. Whynes, Edgewater, Colo.
69 Too Late: Who Is Responsible for Delayed Diagnosis of Pulmonary Tuberculosis? C. H. Cocke, Asheville, N. C.

June, X, No. 6, pp. 181-211

70 Instructions to Tuberculosis Patient. E. Cummings, Hinton, W. Va.
71 It Pays to Fight and Win. W. E. Whitt, Abingdon, Va.
72 Coming Back. R. G. Lindstrom, Denver.
73 Our Duty. L. E. Williams, Oak Forest, Ill.
74 What Backbone Did For Me. P. Reldas.

Kansas Medical Society Journal, Topeka

June, XV, No. 6, pp. 171-202

75 Mechanism of Pelvic Support. F. A. Harper, Pittsburg.
76 Parenteral Protein Digestion — Its Relation to Infectious Diseases. (To be continued.) S. A. Matthews, Lawrence.

Lancet-Clinic, Cincinnati

June 5, CXIII, No. 23, pp. 617-644

77 Tracheotomy. L. D. Brose, Evansville, Ind.
78 Medical and Surgical Fees. T. M. Stewart, Cincinnati.
79 Cause of Arterial Hypertension with Report of Its Treatment. T. A. Williams, Washington, D. C.
80 Surgery of Thyroid Gland Experimental and Applied. J. R. Wathen, Louisville, Ky.
81 Hospitals — History of Their Development. C. R. Holmes, Cincinnati.

June 12, No. 24, pp. 645-672

82 Goiter and Life Expectancy. C. H. Mayo and H. S. Plummer, Rochester, Minn.
83 Some Work Seen in Europe Just Before the War. J. Y. Welborn, Evansville, Ind.
84 Treatment of Pellagra. J. Aulde, Philadelphia.
85 Newer Antitoxin Treatment of Diphtheria. C. A. Stammel, Jr., Cincinnati.
86 Medicine and Politics in Ohio. H. S. Pritchett, New York.

Medical Record, New York

June 26, LXXXVII, No. 26, pp. 1051-1110

87 Recent Advances in Dermatology and Syphilography. C. M. Williams, New York.
88 Effects of Radioactivity on Nasopharyngeal Fibroma. D. B. Delavan, New York.
89 Present Status of Diagnosis of Cancer of Stomach. W. J. Mallory, Washington, D. C.
90 Progress in Use of Standard Salvarsanized Serum Intraspinally. H. S. Ogilvie, New York.
91 *Gluteal Myositis Condition Not Heretofore Described. N. Sharpe and P. W. Roberts, New York.
92 *Case of Jacksonian Epilepsy. V. E. Watkins, U. S. Army.
93 Suggestion Narcosis. A. L. Beck and A. W. Hoyt, New Rochelle.

91. Gluteal Myositis.—The type of myositis Sharpe and Roberts describe is sharply localized, being usually limited to the gluteus medius and tensor fascia femoris, and sometimes involving the gluteus minimus and the gluteus maximus to a slight extent. The pain and tenderness is circumscribed with no involvement of other muscles of the body. In none of their cases did the authors find any induration. Compared with the same tissues of the opposite side, the affected muscles felt normal, except for occasional tension and the presence of pain and tenderness. In several cases palpation disclosed prominences in the body of the muscle

that might easily be mistaken for inflammatory indurations. These could be made to disappear, however, by pressure of the fingers and were due to temporary spasm of the muscle fibers. None of the causes usually mentioned in connection with myositis, with the possible exception of autointoxication from gastro-intestinal disturbances, seems to have been operative. Influenza, tonsillitis, pharyngitis and gout were excluded by the histories of the cases. Many of the cases showed evidences of gastro-intestinal indigestion, such as coated tongue, dry, reddened throat and constipation. The condition is not fatal, but merely more or less disabling. The authors have seen sixteen cases.

92. **Case of Jacksonian Epilepsy.**—The case of jacksonian epilepsy reported by Watkins presents some unusual features, particularly with reference to the acute onset of the condition, the steadily increasing frequency and severity of the convulsions, and the prompt disappearance of all symptoms on removal of the cortical irritation due to a cyst about the size of a small hen's egg located approximately at the lower end of the precentral gyrus.

Military Surgeon, Chicago

June, XXXVI, No. 6, pp. 505-618

94 Question of Synonomy. C. S. Ludlow.
95 Suppurative Otitis Media, and Its Complications. G. B. Trible, U. S. Navy.
96 Operative Perforation of Nasal Septum. W. R. Eastman, U. S. Army.
97 Rope in Bread in Field Bakery, U. S. Army. G. L. Qualls, U. S. Army.
98 Antiseptic Iodin Solution. H. W. Yemans, U. S. Army.
99 Antityphoid Inoculation of National Guard. C. B. Walls, Ill. N. G.

New Jersey Medical Society Journal, Orange

June, XII, No. 6, pp. 261-312

100 Lung Complications of Cardiac Disease. H. Brooks, New York.
101 Nitrous Oxid and Oxygen Anesthesia. C. J. Larkey, Bayonne.
102 Visual Acuity and Its Significance. I. F. P. Turner, Trenton.
103 Eye Strain. E. Blackwell, Trenton.
104 Plea for Routine Rectal Examination. D. A. Kraker, Newark.
105 Child and Tuberculosis Problem. G. K. Dickinson, Jersey City.
106 Legislative and Public Health Committees. J. S. Yates, Paterson.

New York Medical Journal

June 26, CI, No. 26, pp. 1301-1360

107 *Prognostic Significance of Tuberculous Cavities in Lungs. M. Fishberg, New York.
108 Empyema of Nasal Accessory Sinuses. H. Smith, New York.
109 Secretin and Its Therapeutic Possibilities. J. W. Beveridge, New York.
110 Foreign Body in Esophagus. A. Jablons and M. M. Banowitch, New York.
111 Liver Abscess of Doubtful Etiology. J. G. Townsend, Louisville.
112 First Aid Kits for Factories. G. M. Price, New York.
113 Some Disorders of Foot Simulating Weak Foot. E. S. Geist, Minneapolis.
114 Cerebral Trauma and Acute Dilatation of Stomach. H. A. Haubold, New York.
115 Parathyroids and Tetany. E. L. Hanes, Rochester.
116 Benzol in Treatment of Myelogenous Leukemia. O. H. Petty, Philadelphia.

107. **Tuberculous Cavities in Lungs.**—The significance of tuberculous excavations of the lungs Fishberg states is estimated by the consideration of two factors: The acuteness of the underlying process, and the time it took for the production of the cavity. In very acute forms of tuberculosis cavitation is exceedingly rare. The prognosis is gloomy with or without localized destruction of pulmonary tissue. In adults such cases are rare, but in infants rapid cavity formation is seen at times and the termination is almost invariably fatal. In subacute forms of phthisis, in which excavations are apt to form very rapidly, the prognosis is unfavorable, unless the cavity is rather small. In the latter case the disease may be attenuated and subsequently pursue a chronic course with the sequestration and expulsion of the affected area. Excavation is then the first step toward a diminution of the acuteness of the tuberculous process in the lung. The general symptoms may be ameliorated, as after the evacuation of an abscess.

In chronic phthisis, excavations, even when extensive, are compatible with a long and efficient life. These cavities are surrounded by a more or less dense fibrous capsule which limits their extension and are drained through a fistulous tract communicating with a bronchus. As long as the secretions are eliminated by expectoration, the patient may feel quite comfortable for years. Because they expectorate large numbers of tubercle bacilli, they are often sources of infection to a greater extent than many patients without excavations. Pulmonary cavities may heal. When small, they may be obliterated by granulations or by calcification of their contents. Larger excavations may shrink, or, even when remaining of large dimensions, they may become altogether benign after the necrotic tissue has been expelled. They are, however, a constant source of danger for metastatic autoinfection. On the whole, cavities are an indication of chronicity of the tuberculous process in the lung, showing that the resisting forces are active and as such are less dangerous than many cases which have by common consent been considered incipient and curable.

New York State Journal of Medicine

May, XV, No. 5, pp. 167-204

117 General Principles and Mechanism of Infection and Immunity. V. C. Vaughan, Ann Arbor, Mich.
118 World War and Maritime Commerce. J. J. O'Connell, Rosebank.

June, No. 6, pp. 205-249

119 Report on Rollier Treatment for So-Called Surgical Tuberculosis. J. H. Pryor, Buffalo.
120 Pollinosis (Hay-Fever) Consideration of Its Treatment by Active Immunization. S. Oppenheimer and M. J. Gottlieb, New York.
121 Vaccine and Serum Therapy. W. D. Alsever, Syracuse.
122 Infected Colon and Its Surgical Therapy. J. M. Lynch and J. W. Draper, New York.
123 Glioma of Spinal Cord. R. S. Fowler, Brooklyn.
124 *Immunization Against Measles. C. Herrman, New York.
125 Case of Lead Poisoning. W. A. Groat, Syracuse.

124. **Immunization Against Measles.**—The material for inoculation was obtained by Herrman from otherwise healthy children, taken twenty-four hours before the measles eruption appeared. The mucus from the nose was taken. This was collected on swabs of cotton and kept in small glass vials. A moist chamber was improvised by placing a moistened piece of blotting paper at the bottom. Only perfectly healthy infants under 5 months were inoculated. The first were tested with the cutaneous tuberculin test, but when it was found that ten consecutive cases gave a negative reaction, the test was deemed unnecessary. The inoculations were made by applying the swab gently to the nasal mucus membrane. Up to the present time forty infants have been inoculated at the following ages: One at 2½ months, four at 3 months, three at 3½ months, six at 4 months, fifteen at 4½ months and eleven at 5 months. The inoculations were made by preference between the fourth and fifth month because, as the immunity was not absolute at that time, it seemed more likely that the organism would react with the formation of antibodies.

The majority of the infants showed no distinct reaction: fifteen had a slight rise of temperature, from 100 to 101.5 F., varying in the time of its appearance from the eighth to the fourteenth day. In a few instances a small number of spots were noted on the face or body, varying from the fourteenth to the eighteenth day, but these were so few and indistinct that they would ordinarily have escaped detection. No oral manifestations were present. Of the forty cases inoculated four have since come in intimate contact with cases of measles and have not contracted the disease. In addition, having satisfied himself that those who were inoculated were really immune, two of the cases were reinoculated by Herrman at the age of 21 and 23 months, respectively. In both cases the result was negative. In view of the fact that the virus of measles has been shown to be filterable, it would seem preferable to use the filtrate. Herrman therefore prepared a filtrate by thoroughly mixing the mucus with a normal saline solution and passing it through a Berkefeld candle. However, from some experimental work which he has done, Herrman believes that the filtrate is usually nonvirulent and could not be depended on for the purposes of immunization.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

May, XX, No. 5, pp. 253-313

126 Trachoma and Its Relation to Public Health. T. Clark, U. S. P. H. Service.
127 Use of Scopolamin-Morphin in Surgery and Obstetrics — Twilight Sleep. A. Brenizer, Charlotte, N. C.
128 The Physician. R. H. Garthright, Vinton.
129 Mediastinal Tumor. J. M. Hutcheson, Richmond.
130 Spasmophilic Diathesis. R. S. Preston, Richmond.
131 Appendicitis in Children. W. L. Peple, Richmond.

South Carolina Medical Association Journal, Anderson

May, XI, No. 5, pp. 137-170

132 Early Diagnosis of Typhoid by Use of Blood Cultures Taken Into Ox Bile. R. L. McCrady, Montreal, Canada.

Surgery, Gynecology and Obstetrics, Chicago

June, XX, No. 6, pp. 631-750

133 *Some Observations on Bone Transplantation. D. Lewis, Chicago.
134 *Empyema of Thorax. A. O. Wilensky, New York.
135 Nephrectomy During Pregnancy; Report of Case. A. H. Harrigan, New York.
136 *Repair of Fractures. I. Cohn and G. Mann, New Orleans.
137 Reconstruction and Repair of Abdominal Organs with Intestinal Grafting. A. L. Soresi, New York.
138 Team-Work. B. B. Davis, Omaha.
139 *Origin and Fate of Osteoclasts. C. W. Prentiss, Chicago.
140 Alkalescence, Acidity, Anesthesia. G. W. Crile, Cleveland.
141 Acquired Megacolon; Report of Case. I. Abell, Louisville.
142 Pancreatic Cysts; Report of Case. A. M. Willis and S. W. Budd, Richmond, Va.
143 Ovarian Fibroids; Report of Six Cases. A. M. Hellman, New York.
144 *Massive Umbilical and Ventral Hernias. A. McGlannan, Baltimore.
145 Plea for Higher Hospital Efficiency and Standardization. H. G. Wetherill, Denver.
146 Vivisection of Nation. G. W. Crile, Cleveland.
147 Science Has Perfected Art of Killing — Why Not of Saving? A. Carrel, New York.
148 Scientific Control of Field Service. A. Wright, London.
149 Practical Problems from Viewpoint of Field Inspector. T. Tuffier, Paris.
150 Military Surgery from Viewpoint of Field Consultant. B. Moynihan, Leeds, England.
151 *Ten Commandments for Military Surgeon. F. von Eiselsberg, Vienna, Austria.
152 Case of Temporosphenoidal Abscess, Discovered by Exploration Through Multiple Small Incisions in Dura, Drained and Cured. J. R. Page, New York.
153 *New Position for Proctoscopic Examinations. H. Crouse, El Paso, Tex.
154 Prostatic Surgery in Light of Recent Progress. H. Packard, Boston.
155 Orthopedic Technic. J. K. Young, Philadelphia.
156 Tarnier Axis Traction Rods Applied to Simpson Obstetric Forceps. F. C. Irving, Boston.
157 Resection of Bone for Protrusion of Mandible. T. L. Gilmer, Chicago.
158 *Simplicity of Blood Transfusion by Means of Kimpton-Brown Tube. J. M. Mason, Birmingham, Ala.

133. **Bone Transplantation.** — Experimental and clinical work has demonstrated to Lewis that the compact bone in a bone graft is gradually absorbed, that it is replaced by new bone formed from the periosteum and endosteum of the graft. The periosteum of bone into which the graft is inserted also plays an important rôle and should be saved and brought in contact with the periosteum of the transplant or over the ends of the same. This is now admitted by Barth, who first stated that a bone graft had merely an osteoconductive function. The viability of bone grafts is especially well indicated by their reaction to infection, for involucrum and sequestrum formation occurs in infected grafts or in those placed in infected areas as it does in normal bone. Bone grafts placed in cavities, resulting from curettage of central giant-cell sarcomas or fibrous osteitis, will not survive in most cases, for the hematoma which occurs within the cavity prevents vascularization of the graft. The cavities can be closed most satisfactorily by a bone plug of some kind The inlay graft in the treatment of old ununited or recent fractures is more satisfactory than the intramedullary splint, for the endosteum of the graft comes in contact with the endosteum of the bone and the periosteum of the bone can be sutured to the periosteum of the graft. In the intramedullary splint considerable endosteum is destroyed in preparing the medullary cavity for the reception of the graft, and the endosteum is one of the important factors in bone repair. Compact bone dies in the graft because of its physical properties, which do not permit of rapid permeation of serum. The best bone graft contains enough compact bone to give form and maintain fixation and also contains periosteum and endosteum from which the compact bone is substituted. Grafts taken from the anteromedial surface of the tibia are to be preferred to those taken from the crest.

134. **Empyema of Thorax.**—A critical study of eighty-two cases of chronic empyema sinus of the chest was made by Wilensky. In 75 per cent. of the patients the cause for the formation of the chronic sinus was present from the very inception of the disease. These can be grouped as follows: (*a*) In 52 per cent. there were uncollapsible cavities; (*b*) in 7 per cent. lung abscesses or bronchopulmonary fistulae occurred, or both; (*c*) in 15 per cent. the origin was tuberculous. Excluding the tuberculous cases, which present a special problem—that of the cause of tuberculous infection —60 per cent. of the patients owed their chronic sinuses to conditions which were present and were not remedied at the primary operation. The method of operating for acute empyema must permit of a thorough examination of conditions in the chest and the removal or correction of any lesion which tends to the formation of chronic sinuses. The remaining 25 per cent. of the patients owed their chronic sinuses to faults in the after-treatment, which with good care can and should be eliminated.

136. **Repair of Fractures.**—A study of vigorously growing embryonic bone or bone in which increased activity has been called for by injury shows that bone will respond in two ways: 1. Either by an exceedingly active subperiosteal (nothing to do with the periosteum) proliferation of osteoblasts, in consequence of which the new bone is much richer in bone corpuscles than bone growing more leisurely, this newly formed bone will form a distinct cortical layer and will push the periosteum before it. 2. When, as a result of a more severe injury the nutrition has been interfered with, by rupturing the blood vessels of the haversian systems, bone cells adapt themselves to the new conditions by undergoing a chemical change, in consequence of which they gradually become converted into cartilage. The latter having acted for a time as a bond of union between the two adjacent fractured ends of bone will in the end be invaded by an extension of medullary spaces. This cartilage also serves as a scaffold for the deposit of true bone on its surface. In some instances the proliferation of the osteogenous cartilage is so vigorous as to invade the haversian systems, in which case these canals will be lined by cartilage. The periosteum seems to react only in some cases by proliferating vigorously and becomes included passively, as Sharpey's fibers by the enveloping bone. From a clinical point of view, the main result of Cohn and Mann's investigation is that even without periosteum a very firm union of bone may be obtained, a phenomenon readily explained on the assumption that the union is brought about by special modification of the bone itself, and is not due to any activity on the part of the periosteum.

139. **Origin and Fate of Osteoclasts.**—Prentiss summarizes his articles as follows: Osteoclasts may be formed in early stages of bone development from the reticular cells of bone marrow, in later stages from osteoblasts which have ceased to deposit bone and constitute a syncytium. The numerous nuclei of large osteoclasts are derived (*a*) from the constituent osteoblasts of the cell, (*b*) from bone cells which are ingested as the bone matrix is resorbed. It is probable that the osteoclasts are the active agents in bone resorption, but there is no direct evidence at present that they produce free acid or a digestive ferment. Eventually the osteoclasts either atrophy and disappear or are resolved into the reticulum of the bone marrow. It is not probable that they again form bone matrix.

144. Abstracted in THE JOURNAL, Jan. 30, 1915, p. 465.

151. **Ten Commandments for Military Surgeon.**—According to von Eiselsberg these are: 1. The fresh wound must not

be touched with the finger and no antiseptics must be applied to it. As soon as possible the fresh wound is covered with a piece of dressing, without the wound or the tissues around it being washed or irrigated. 2. The treatment of primary hemorrhage, if local compression with dressings is not sufficient, is to be accomplished with elastic bandages or Knebel's tourniquet. 3. The canal of the bullet should not be probed either with a sound or with the finger, nor should it be tamponed with a piece of dressing, even if it is sterile. 4. Fractures should be immobilized by fixing both the neighboring joints. 5. The extraction of projectiles is a pressing operation only in very rare cases, and even secondarily should only be performed when there is some special indication for it, as when the bullet is causing serious symptoms or can be felt immediately under the skin. 6. In all painful operations, even painful changing of dressings, in which injection of morphin is not sufficient, ether should be resorted to. 7. In suppuration the secretion should be emptied out by incision and counterincision along the dressing forceps introduced into the wound, and then, always under anesthesia, a drainage tube inserted. Tamponing of the opening should always be avoided. 8. In every swelling that is at first diffuse, then gives the impression of an abscess and causes fever, one should think of the possibility of an arterial hematoma, aneurysm. 9. For the sake of maintaining asepsis at every stage in the treatment of wounds, the use of strong rubber gloves that can be easily washed without any especial care is earnestly recommended. 10. Extensive operations should, so far as possible, be put off until the hospital is reached, where all aseptic precautions can be rigidly carried out and the patient can be kept for after-care. The most important of these ten commandments is: Dressings must be aseptic and military surgery as conservative as possible.

153. **New Position for Proctoscopic Examinations.**—Crouse places the patient face downward on an ordinary examining or operating table, the leaf of the latter being dropped; two chairs or stools padded with pillows or sheets to serve as a shoulder bushing are placed so as to permit the head of the patient to pass easily between them, the shoulders being supported by the separated chairs or stools. While bending over the end of the table, the patient is supported by the nurse or surgeon, the torso clearing the table far enough to avoid pressure by its edge on the lower abdomen.

158. Abstracted in THE JOURNAL, Jan. 23, 1915, p. 365.

Wisconsin Medical Journal, Milwaukee

May, XIII, No. 12, pp. 463-504

159 Relation of State University to Medical Profession. C. R. Bardeen, Madison.
160 Pathology of Repair of Fractures; Pathology of Delayed and Nonunion. H. F. Derge, Eau Claire.
161 Open Treatment of Fractures. J. F. Smith, Wausau.
162 Formaldehyd Fumigation Failure. G. C. Ruhland, Milwaukee.
163 Two Cases of Exophthalmic Goiter with Ocular Muscle Complications. L. M. Willard, Wausau.
164 Modified Muscular Advancement Operation Applicable in all Cases and Easy of Execution. J. A. Bach, Milwaukee.
165 Ninety-Day Clause in Workmen's Compensation Act. W. F. Zierath, Sheboygan.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

June, XX, No. 1, pp. 1-40

1 Inhibitive Effect of Roentgen Rays on Malignant Growths. C. Kempster.
2 Treatment of Non-Malignant Growths by Diathermy. E. P. Cumberbatch.
3 Modification of Occipitofrontal Position in Roentgenography of Accessory Nasal Sinuses. C. A. Waters.
4 Stone in Submaxillary Gland. C. T. Holland.
5 Congenital Malformation of Both Hands and Forearms. J. Metcalfe.

British Medical Journal, London

June 12, I, No. 2841, pp. 993-1032

6 Ureteral Stone. J. H. Watson.
7 *Mortality of Appendicitis. G. G. Turner.
8 Case of Cerebrospinal Fever Simulating Acute Nephritis with Uremic Convulsions. E. H. Roberts and A. P. Ford.
9 Acute Gonorrhea Treated by Electrolysis. C. Russ.
10 Surgical Work at Military Hospital, Cairo. J. C. Jefferson and O. H. Blacklay.
11 Temperature in Case of Advanced Pulmonary Tuberculosis. J. C. Voigt.

7. **Mortality of Appendicitis.**—During the last ten years there have been treated in the wards of the Newcastle-on-Tyne Royal Infirmary a total of 3,951 cases of appendicitis, with an over-all mortality of 5.41 per cent. When cases of acute appendicitis are operated on before infection of the peritoneum has become extensive (389 cases with ten deaths), Turner says, it is possible to keep the mortality as low as 2.57 per cent.

Dublin Journal of Medical Science

June, III, No. 522, pp. 401-479

12 Cases of Landry's Paralysis; Myasthenia Gravis; Automatism. J. A. Lindsay.
13 Urinary Concretions and Their Modes of Genesis. W. G. Smith.
14 Account of Irish Medical Periodicals. T. P. C. Kirkpatrick.

Indian Medical Gazette, Calcutta

May, L, No. 5, pp. 161-200

15 Treatment of Cataract in India. H. Smith.
16 Treatment of Kala-Azar with Special Reference to Leukocyte Increasing Methods, Spleen Tabloids and Alkalies. L. Rogers.
17 Charges of Rape. W. D. Sutherland.
18 Studies in Malaria. H. Stott.
19 Inoculation Against Plague and Pneumonia and Experimental Study of Therapeutic Methods. (To be concluded.) W. M. Haffkine.
20 Two Cases of Ruptured Bladder, Recovery. A. Neve.

Journal of Laryngology, Rhinology and Otology, London

June, XXX, No. 6, pp. 209-264

21 Tuberculosis of Middle-Ear Cleft in Children. A. L. Turner and J. S. Fraser.

Journal of Tropical Medicine and Hygiene, London

June 1, XVIII, No. 11, pp. 121-132

22 Animal Inoculations of Trichophyton Discoides Sabouraud, 1909. A. J. Chalmers and N. Macdonald.
23 Differential Diagnosis of Verruga Peruviana. R. P. Strong, E. E. Tyzzer and A. W. Sellards.

Lancet, London

June 12, I, No. 4789, pp. 1217-1274

24 Some Congenital Lesions of Small Intestine. J. H. Evans.
25 *Bacterial Flora of Wounds Produced During Present War. L. S. Dudgeon, A. D. Gardner and F. Bawtree.
26 Naval Medical Committee and Wounds in War. J. G. Saner.
27 Diversity of Opinion Concerning Diagnosis of Tuberculosis. G. H. Dart.
28 Some Principles of Dietetics. J. S. Wallace.
29 *Sterilization of Albuminous Culture Media by Ether. P. Fildes and L. W. Rajchman.

25. **Bacterial Flora of Wounds.**—The authors emphasize the value of the liquid egg and veal medium of Besredka and the advantages this medium offers both for the cultivation of the aerobes and anaerobes; in fact, without it they should have failed on many occasions to detect the anaerobic bacteria in the infected tissues. Twenty-one wounds in all yielded cultures either of *B. tetani* or of *B. aerogenes capsulatus*, or of both. The majority of these wounds entailed considerable damage to the tissues, but they were of all varieties, ranging from a trivial skin wound to a severe and extensive compound fracture of a long bone—in fact, there was no special feature of clinical interest to suggest the importance of the bacteriologic findings. With a single exception every wound was infected with aerobic bacteria in association with the anaerobes. The exceptional case was that of a superficial shrapnel wound in the neighborhood of the knee joint; the joint cavity was infected, although the synovial membrane was intact. From the pus which was evacuated from the interior of the joint a pure culture of *B. aerogenes capsulatus* was obtained, and here it was evidently behaving as a simple pyogenic bacterium. The afterhistory of this case gave nothing to suggest to those in charge that they had been dealing with suppuration produced by the common organism of gas gangrene. Guinea-pigs inoculated with a culture of this organism died within twenty-four hours, from a rapidly spreading gangrene of the tissues.

In every other case the authors found either a staphylococcus, *B. coli*, or *B. proteus* in the wound. The frequency with which *B. coli* appears with *B. tetani* suggests that its presence may be particularly favorable for the survival of this anaerobe. Of eleven patients in whose wounds the bacillus of tetanus was found, nine had been treated prophylactically with tetanus antitoxin at an early date, and at no time did any one of these exhibit any symptoms of tetanus. Two had not received any prophylactic injection, and of these one developed the disease and the other did not. The last mentioned case demonstrates that a wound may become infected with *B. tetani* without tetanus resulting, and that quite apart from the question of antitoxin. There was, however, no reason to doubt that the prophylactic injection of antitoxin has been the means of saving the majority of these patients from the most serious disease arising from wound infection. It is therefore of considerable importance to realize that a wounded man may be acting as a carrier of these dangerous bacilli for at least two months after the date of the wound, and probably for a much longer period, without any reason on clinical grounds to suggest that these bacteria are present in the tissues.

29. **Culture Media Sterilized by Ether.**—Fildes and Rajchman have applied the Ori method in the following way: 1. The serum or ascitic fluid is collected without any particular aseptic precautions and enclosed in a well-stoppered glass bottle. In the case of the ascitic fluid, which varies greatly in reaction, acid or alkali is added to render it neutral to phenolphthalein, and, if necessary, it is filtered through paper. 2. Ordinary methylated ether is added to 3 per cent. and the stopper tied in. 3. The bottle is then placed in a water bath at 45 C. for one hour or longer to ensure that the serum is actually heated for the full time. 4. At the end of this time the fluid is found to be sterile and is stored for use. 5. When required a sample is removed from the bottle and placed in a sterile test tube or other vessel. The test tube is then thoroughly agitated in a water bath at about 55 C. and the ether will boil rapidly. When the ebullition has ceased the material will be ready for use. The ether will not boil unless the tube is shaken, and it must not be allowed to remain in the bath long enough for the serum to become thoroughly heated. If the blood corpuscles have not been entirely separated from the serum before sterilization they will be completely laked by the hot ether, and the resulting medium will be more or less deeply stained with hemoglobin, but nevertheless quite transparent. No precipitation or cloudiness appears during the process; on the contrary, the fluids are rendered unusually clear. Within their experience this method has never failed to sterilize either ascitic fluid or serum.

Practitioner, London

June, XCIV, No. 6, pp. 775-910

30 Insufficiency of Quadriceps. J. E. Adams.
31 *Heart Perfusion with Alcohol. D. T. Barry.
32 Treatment of Nasal Accessory Sinus Disease. W. S. Syme.
33 *Preventive Treatment of Catarrhal Deafness. M. Yearsley.
34 Work in Gynecology. F. J. McCann.
35 Syphilis in Differential Diagnosis of Tuberculosis. A. S. MacNalty.
36 Cerebrospinal Fever. E. Milligan.
37 Work on Children's Diseases. H. Thursfield.
38 *Should Vasoconstrictors (Epinephrin, Pituitrin Extract) Be Used in Emergencies, Especially Surgical Shock? J. D. Mortimer.
39 Tuberculosis in India. C. Muthu.
40 Work on Dental Surgery. J. G. Turner.
41 Case of Mastoiditis. L. C. V. Hardwicke.

31. **Heart Perfusion with Alcohol.**—The method adopted by Barry was similar to that described by Mines. The cannula is tied into the inferior vena cava below the liver, an operation which requires some little care. The aortae are cut across, and if it be desired to pass the fluid through more rapidly than from 1.5 to 2 c.c. per minute the auricle must be slit. The alcohol is mixed with Ringer's solution, and in small percentages the perfusion mixture is nearly isotonic with the tissues. A 2.5 per cent. solution of ethyl alcohol in Ringer's solution caused a gradual diminution in force and rate of the auricle, while the ventricle was diminished in rate only, and the heart recovered spontaneously on shutting off the drug. The auricle fades off more quickly than the ventricle, both chambers ultimately coming to a full stop. Perfusion with Ringer's solution was begun a few seconds later, and continued to the end of the record. During several minutes the heart remained quiescent, and numerous stimuli applied to the heart muscle during the greater part of this interval showed irritability or contractility lost (muscle paralysis). Later on, single stimuli gave rise to single contractions, and finally a single stimulus started a continuous rhythmic beat with the ventricle showing a little initial tonus. Alcohol affects muscle and nerve.

33. **Treatment of Catarrhal Deafness.**—The proper course to pursue in dealing with these cases, according to Yearsley, is: First, to make a complete physical and functional examination of the ear, so that its exact condition as regards tympanum, eustachian tube and hearing is recognized; secondly, to examine the nasopharynx and nasal cavities to ascertain their condition and causative relation to the affected ear or ears; and thirdly, to adapt treatment judiciously to the individual case, always bearing in mind that the removal of the cause is of paramount importance.

38. **Vasoconstrictors.**—In cases of shock when there has been no great loss of blood, Mortimer advises the use of vasodilators such as ether (open), nitrite of amyl and brandy, with the customary application of hot-water bottles, etc. To these may be added artificial respiration, with oxygen, and massage of the heart when occasion requires. When there has been much loss of blood with or without shock, it is conceivable that vasoconstrictors by filling up the heart and diverting blood to coronary and intracranial systems may be beneficial, but their action is so difficult to regulate, and the condition so critical and complicated, that even then their use seems hazardous. If there is shock, it may be that too much suprarenalin has already been secreted. Saline infusion, raising of the limbs, lowering of the head, and, when possible, pressure on the abdomen are well tried and hopeful methods. Mortimer believes that any benefit which has followed injection of a vasoconstrictor in saline solution should be credited to the vehicle and not to the drug.

Bulletin de l'Académie de Médecine, Paris

May 18, LXXIII, No. 20, pp. 587-618

42 Indirect Injury of the Eye from Projectiles or from Concussion of the Air from Exploding Shell. (Des désordres oculaires médiats ou indirects par les armes à feu.) Lagrange.
43 *To Minimize Injury from Wounds of Spinal Cord. P. Marie and G. Roussy.
44 *Transmission of Disease by Fomites. (Des conditions de transport des germes morbides par les vêtements et les objets.) A. Trillat.
45 Improved Artificial Leg. (Appareil prothétique à mouvements coordonnés pour amputés de cuisse.) P. Delbet.
46 The Tremor in Typhoid. R. Mercier and R. Meunier.
47 Destructive Action on Lice of Methylphenylether. (Destruction des poux et traitement des phtiriases.) H. Labbé.

43. **Wounds of the Spinal Cord.**—Marie and Roussy think that much can be done to minimize the evil effects of a gunshot wound of the spinal cord. The prognosis is by no means inevitably grave; paraplegias may retrogress. The paraplegia from the direct injury prevents the patient from changing his position, so that he lies constantly on the same parts, thus interfering with the circulation at these points while the prolonged pressure on them invites decubitus. The loss of sensibility contributes to the trouble as the normal inclination to change the position is lacking. A dry eschar forms at these points and, on account of the loss of sphincter control, the eschar is liable to get soaked with urine and become infected. The old idea that the decubitus is directly connected with the injury to the spinal cord must be abandoned; if constant pressure and soiling with excreta can be avoided there will be no sores of this kind. For all these reasons he urges that a man with a wound of the spinal cord should have the sphincters examined at once and a retention catheter introduced to take care of the urine, while the bowels should be locked up with opium to keep the man constipated. The skin at the pressure points should be dusted with powder or greased. If all this is done in the field hospital, the man will reach the base hospital in comparatively

good condition. In the further course of the case, the attendants must be impressed with the necessity for changing the patient's position every hour during the day and every two hours at night.

44. **Transmission of Disease Germs by Clothing and Other Articles.**—Trillat presents evidence that disease germs on clothing, etc., proliferate actively if there is moisture. The exhalations and moisture from the skin are often sufficient for this, so that contagion may occur not only from the germs that alighted on the clothing but also from succeeding generations developing there. Humidity and the gases in the exhalations are necessary for this, while all but exceptionally resistant germs are speedily killed off by spreading the clothing in the sunshine or heating in any other way. Science thus brings the explanation for empiric facts.

Presse Médicale, Paris

May 27, No. 23, XXIII, pp. 177-184

48 *Neuropsychic Disturbances in the War. (Les troubles psychiques et neuro-psychiques de la guerre.) E. Régis.
49 *Acute Infectious Diseases Among the Soldiers. J. L. Valensi.

May 31, No. 24, pp. 185-188

50 What France Has Contributed to the Medical Sciences in the Last Fifty Years: Physiology and Experimental Pathology. H. Roger; Pathologic Anatomy. C. Achard.

June 3, No. 25, pp. 189-196

51 *Wounds of the Lungs in War. (Le syndrome hémo-pleuro-pneumonique.) M. Piéry.
52 *An Epidemic of Diphtheria. Guiart and Fortineau.
53 *Purulent Arthritis from Wounds in War. Chaput.

48. **Neuropsychic Disturbances Among Combatants.**—Régis says that the lessons learned from the Russo-Japanese War had been discussed in France so that the French authorities early in August made special arrangements for centers for psychiatric treatment for the combatants. He was placed in charge of the center at Bordeaux, his home, and here reviews his experience with 450 cases of psychic derangement developing among the men at the front. Neurasthenia was comparatively frequent, especially among the officers. Many of those affected had been serving in the colonies and they were on the verge of a nervous breakdown when the war began. Hysteria, alone or associated with neurasthenia, dominated the stage and the manifestations were diverse and strange beyond belief. The psychic disturbances were nearly all of the type of mental confusion or hallucinatory onirism. By the latter term he means that the man dreams such a vivid dream that he starts up to act in it. The *rêve vécu* is usually the living over again of the circumstances of some special emotional and physical shock. These nightmares usually disappeared by the end of two weeks as also the mental confusion and amnesia. The amnesia following the stress of a battle was usually complete, the men forgetting even their name and all their previous life. Some of them had no memory of anything except the emotional shock of the battle, and this they kept living over again, night and day. These battle psychoses affected those without any predisposition to mental diseases but who were inclined to be emotional, and they were especially tenacious in those debilitated by malaria or other cause. The psychic storm gradually subsided and the men were all able to resume their duties at the front. This confirms the importance of specialist psychiatrist treatment, as under other conditions many of the men might have been regarded as hopelessly insane and have been sent to an asylum. Régis urges that every base hospital should have quarters for these *shockés* where they can be kept under specialist supervision, their trouble diagnosed, and the actually insane sent to an asylum. He adds that quite a number of men were sent to him as suffering from mental derangement which proved to be the delirium of typhoid fever or of meningitis.

49. **Acute Infectious Diseases Among the Soldiers.**—Valensi relates a number of cases of various acute infectious diseases with certain peculiarities in their course, such as erysipelas simulating mumps for five days before the skin lesions developed. In another case with symptoms of acute meningitis, this and the facial paralysis disappeared under treatment for syphilis. In some cases of supposed bronchitis the temperature was very high and the sputum contained large amounts of albumin. About the fifth day the sputum became rusty, and other signs then showed that the disease was pneumonia.

51. **Bullet Wounds of the Lungs.**—Piéry has encountered over a hundred cases of this kind and had opportunity to follow the course in fifty-three of them. With a simple wound of the lung there is merely a pneumonic process accompanied by a hemothorax. The Roentgen picture simulates that of a small pleural effusion, with congestion of the lung laved by it. Exploratory puncture reveals intrapleural extravasation of blood. There was hemoptysis only in a little more than half the cases. When the sputum becomes blood stained after the first day, the temperature generally rises on account of the pneumonic process. All of his twenty-five patients with an uncomplicated wound of the lung recovered. Treatment requires merely revulsion, with ipecac and digitalis to combat the hemorrhagic pneumonia. Abstention from operative measures, leaving the hemothorax entirely alone, is imperative. Extraction of the projectile from the wall should be left till later. Convalescence should be guarded with special care.

52. **Diphtheria.**—In reviewing a group of 100 cases of diphtheria last winter, it was noticed that the long diphtheria bacilli were invariably associated with the more virulent type of the disease. When the short bacillus was found in the throats of carriers, no infection resulted. The long bacillus generally disappears from the throat in five weeks, the short in three. About 125 carriers were found among 640 inmates of the hospital but only one carrier developed diphtheria, even when they were in contact with diphtheria patients.

53. **Purulent Arthritis from Wounds.**—Chaput discusses the proper treatment for each of the large joints in turn after a bullet or shell wound, describing the special syndrome and indications for each and the various steps of operative intervention.

Beiträge zur klinischen Chirurgie, Tübingen

XCVI, No. 2, pp. 181-276. Last indexed May 8, p. 1619

54 *Surgery in War. (Chirurgie im Kriegslazarett.) Von Rothe and M. von Brunn.
55 Surgery in the Field Hospital. Goebel.
56 *Abdominal Wounds in War. (Stich- und Schussverletzungen des Bauches.) S. Basdekis.
57 Asepsis and Antisepsis in the Base Hospital. (Im Reservelazarett.) Meissner.
58 Advantages of Nail Extension in Treatment of Fracture of Femur in War. (Schussfrakturen des Oberschenkels.) F. Hohmeier.

54. **Surgery in War.**—Rothe comments on the two sayings one hears now on all sides, namely, that military surgery is not peace surgery, and that military surgery must be conservative. Yet infinite harm will result if they are not properly interpreted. He reviews his several months of experience at the front, and draws a number of conclusions, emphasizing in particular the importance of immobilization in treatment, and reiterating anew that the fate of the wounded depends in large measure on the way the wound is first tended.

56. **Abdominal Wounds.**—Basdekis' article is based on cases of abdominal wounds in the last Balkan War and on sixty-three cases at the Freiburg surgical clinic since 1901. He compares this material and the lessons drawn from it with experiences in preceding wars. The details of twenty cases from the clinic are given.

Berliner klinische Wochenschrift

May 24, LII, No. 21, pp. 537-568

59 *Prophylaxis of Typhoid in Places Occupied by the Troops. (Typhusbekämpfung im Felde, speziell beim Stellungskampf.) Goldscheider.
60 *Air Found in Lungs of Fetus with Intact Bag of Waters. (Zur Bewertung der Lungenschwimmprobe.) S. Schönberg.
61 *Measures to Reduce Infant Death Rate. (Entwicklung, Erfahrungen und praktische Arbeit des Kaiserin Auguste Victoria Hauses zur Bekämpfung der Säuglingssterblichkeit im Deutschen Reiche.) L. Langstein. Commenced in No. 20.

62 Mathematical Principles for Roentgen Localization of Foreign Bodies. (Fremdkörperlokalisation.) L. Katz and W. Salow.
63 Action of Dumdum Bullets. (Zur Frage der Dum-Dum-Geschosse und ihrer Wirkungen.) B. Valentin.
64 *Flushing the Chest for Purulent Pleurisy. (Behandlung der Brustfelleiterung mit Spüldrainage.) E. Leschke.
65 Caustic Action of Certain Remedies Against Vermin. Löhe and Priess.
66 Necessity for Caution in Estimating Results of Treatment of Syphilis. M. von Zeissl.

59. **Typhoid at the Front.**—Goldscheider comments on the frequently atypical picture presented by typhoid in the troops at the front. Often it was so mild that the men thought they were merely tired. A number of wounded brought to the hospital were found in the midst of typhoid. In other cases the first symptom was sciatica or other neuralgia, cholecystitis, cystitis, tonsillitis or deafness. As bronchitis was present in nearly 60 per cent. of all cases, while diarrhea was far from constant, the assumption of influenza often seemed plausible. One patient had no symptoms but hoarseness; others presented apparently typical acute articular rheumatism. In differentiation it is of the greatest assistance to know of other cases of typhoid in the vicinity, but army doctors are not always posted as to what is going on around their own particular domain; the consultant internist visiting the different troops should remedy this by a system of prompt dissemination of news in regard to sickness, without waiting for official reports. To permit early bacteriologic differentiation it is necessary to have the laboratory close at hand. It has been found very convenient to collect in central quarters close to the front those with or suspected of having typhoid. The observation ward must be repeatedly cleared out and the men not kept there for treatment.

60. **Immersion Test of Fetal Lungs.**—Schönberg reports a case which shakes the foundations of the medicolegal test as to whether the child had lived after birth. He found air in the expanded lungs of a seven-months fetus which he had taken out himself from the still intact membranes, the mother having died from pulmonary tuberculosis. No attempt at artificial respiration had been made nor operative measures of any kind applied. No signs of gas-producing infection or putrefaction could be detected. Although such a case is a great rarity, yet the occurrence of even one case of expanded, air-containing lungs in a fetus dying in the uterus with intact bag of waters, detracts materially from the reliability of the immersion test from the forensic standpoint.

61. **The Infant Death Rate.**—Langstein here describes the development, the experiences and the practical work of the central institution, the headquarters of the organized efforts to reduce the infant death rate throughout the German empire. Among the many points emphasized is that whooping cough is unquestionably the most dangerous of all the acute infectious diseases that get into an institution in which there are infants. At the same time his experience has demonstrated that it is generally possible to bring the children through by protecting against secondary infection, and feeding concentrated food, with plenty of water. He is convinced that nervousness in an infant is not an innate tendency as a rule, but is an acquired evil. There are comparatively few actually neuropathic infants in comparison to the number rendered nervous by the fidgeting care of people in their environment. Where no one has any time to keep lavishing attentions on the infants, the little ones develop without being nervous. Rebellious constipation was never encountered among the infants in the institution while bad habits of training render this so common in private families. He has noticed that children of tuberculous parents and in families where a number of the children have died, succumb particularly easily. Even being left a few hours after birth with a tuberculous mother was enough to seal the doom of the child in all the cases in this group. The only certain protection against tuberculosis is to separate the child from the mother as soon as the umbilical cord is severed.

Breast milk is available in the institution to such an extent that outsiders can be supplied. The institution has its own cows; the number of germs in the milk ranges from 900 to 3,000. A year's training is given to prepare a nurse to care for an infant in the home and two years for institutional work, six months of which have to be spent in hospital nursing to learn the general care of the sick. The service in the observation ward requires special reliability, aseptic care and great powers of observation. There is one day nurse for each four or five sick children; one for three in the observation ward.

Girls from high schools and schools of domestic science are given courses of practical training in the care of healthy infants, and this is considered one of the most useful and promising phases of the work of the institution. The number of those who want to make the care of infants their life work is large and constantly increasing. More than a thousand applications are received during the year for this training. Three German cities now give diplomas for trained infant nurses. A dispensary and consultation for infants and small children and a policlinic supplement the above and afford opportunity for continued supervision and training in observation. Practical pediatric courses for physicians are given once or twice a year, and other courses are given to mothers and others and a host of pamphlets and circulars have been published. a museum of infant welfare work installed and a special periodical; the *Zeitschrift für Säuglingsschutz*, is issued by the institution, while an advisory department confers with those seeking advice on any subject connected with infant welfare.

64. **Rinsing and Draining in Purulent Pleurisy.**—Two catheters are used, one bringing fluid from the irrigator the other draining it away. Empyema heals without deformity, as the chest is thus cleared completely and kept cleared of pus, while the expansion of the lung is not interfered with. Two cases are described by Leschke, with illustrations. The inflow of fluids is graduated so that no compression of the lung is allowed. It is kept up until the fluid comes away entirely clear. He used physiologic salt solution; as much as 5 liters was required at first. In severe cases continuous irrigation might be advisable and possibly addition of some disinfectant to the fluid. He was content with from two to four thorough rinsings during the day. After the flushing is over, one or both of the catheters can be left open for siphon aspiration. By this method there are no fluctuations in pressure in the chest as with other technics, while the functioning of the lungs proceeds undisturbed. It is important to guard against the outflow becoming obstructed while the inflow continues. The drawback to the method is the necessity for extreme care in the after-treatment.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 15, XLV, No. 20, pp. 609-640

67 Antitetanus Serum in Prophylaxis. J. Dubs.
68 *Cardiovascular Disturbances in the Soldiers. (Krankheiten der Kreislauforgane und der Krieg.) G. Galli.
69 Eruption and Pruritus after Atophan. (Pruritus cutaneus universalis mit urticariellem und scharlachähnlichem Exanthem nach Atophangebrauch.) G. H. Pestalozzi.

May 22, No. 21, pp. 641-672

70 *The Dangers of Iodin Treatment. (Gefahren der Jodbehandlung.) A. Oswald.
71 Effects of Gases at Explosions in Peace and in War. (Katastrophenmedizin, II.) H. Zangger.

68. **Cardiovascular Disturbances and the War.**—Galli thinks it an extremely significant fact that nervous cardiovascular disturbances are observed particularly when the men are talking about especially serious times they had been through in the war. This is evident when the man is making an official report on the events in question, thus demonstrating anew not only the psychic origin of heart neuroses, but the necessity of treatment based on this fact. Galli reiterates that one can never emphasize too much the importance of the workings of the mind for the functioning of the circulation organs. A memory, an impression, in short, any psychic process—it may even be below the threshold of consciousness—may influence the heart action and drive the pulse up to 120 or 140, with sudden sweating and all the other phenomena which Grober has described as encountered now

among the soldiers. The psychic condition may affect not only the heart, but the course of material affections. The prognosis of cardiac neuroses is, of course, favorable; the outcome depends on the ability of the physician to influence the patient's mind, as it is here that the trouble lies. He relates a number of instances to show how excitement may sweep a man out of himself and a supposed organic heart affection vanish completely under the physical and emotional stress of a campaign. As an instance of the remarkable resisting powers of the organism, he cites the case of a farmer who during the last great earthquake in Italy was buried under the ruins for twenty-five days, with nothing to eat or drink except rain water that trickled through the ruins. His psychic condition may be estimated from his first remark when rescued: he asked whether his cattle had been saved.

70. **Dangers of Iodin Treatment.**—Oswald refers particularly to regions where goiter is endemic, as at Zurich where he practices. He estimates that 90 per cent. of the entire population of Switzerland, outside of the Jura region, have more or less pronounced enlargement of the thyroid. When there is a tendency to goiter, iodin is liable to entail severe disturbances, all in the line of symptoms of hyperthyroidism. He explains this as the effect of mobilizing the secretions stored up in the gland. The iodin routs them out, and, as they flood the circulation, the symptoms from excessive thyroid functioning become apparent. The iodin also combines with the secretion to form the even more toxic iodothyreoglobulin. In some of the eight severe and typical cases he describes in detail the patients had previously taken iodin without harm. He has also encountered three other cases, so that his study of the subject is based on the literature and eleven personal cases.

Deutsche medizinische Wochenschrift, Berlin

May 20, XLI, No. 21, pp. 605-636

72 *Improvement under Vaccine Therapy of Typhoid. E. Peiper.
73 Technic for Culture Medium. (Der vollwertige Ersatz von Liebigs Fleischextrakt im Typhusnährboden nach v. Drigalski und H. Conradi.) A. Hirschbruch and F. Diehl.
74 Early Surgical Treatment of Wounds of the Skull. (Schädelschüsse.) G. Hoesemann.
75 Radiotherapy with Ultra-Hard Roentgen Rays. J. Rosenthal.
76 *Torsion of Pedicle of Undescended Testicle. (Zur Stieltorsion des Leistenhodens.) M. Jastram.
77 Favorable Experiences with Apparatus for Inhaling Mercury. (Erfahrungen mit dem Frankensteinschen Quecksilber-Inhalierverfahren.) G. Stümpke.
78 Technic of Breast Nursing. (Natürliche Ernährung und Gewichtsverhältnisse von 100 Säuglingen der Osnabrücker Hebammenlehranstalt.) Schulte.
79 *Chlorinated Lime and Bolus Alba as Dressing for Wounds. (Wundstreupulver Chlorkalk-Bolus alba.) M. Edel.

72. **Vaccine Therapy of Typhoid.**—Peiper's experimental research in this line dates back to 1887, and his clinical experience to 1891. Although he never applied the vaccine treatment on a large scale, he was always impressed by the improvement in the general condition, the shortening of the disease process and the absence of any untoward by-effects.

76. **Torsion of Pedicle of Undescended Testicle.**—The patient was the father of six children and had never noticed that there was but one testicle in the scrotum. The torsion was announced by sudden violent pain one morning in bed. The operation two days later comprised the removal of the ectopic testicle.

79. **Chlorinated Lime and Bolus as Dressing for Wounds.**—Edel dusts the wound with a powder consisting of one part bleaching powder in nine parts bolus alba or fullers' earth. It seems to be entirely harmless, he says, while it deodorizes, reduces secretion and stimulates tissue repair, is accessible anywhere and very inexpensive.

Deutsche Zeitschrift für Chirurgie, Leipzig

April, CXXXIII, No. 2, pp. 113-231

80 Wounds in War 1870 and 1914. (Kriegserinnerungen.) Riedel.
81 Wounds of the Vagus in War, with Reflex Contracture. (Direkte Verletzung der Vagusgruppe, eine Kriegsverletzung.) H. Gross.
82 *Operative Treatment of Fractured Bones. (Blutige Vereinigung von Knochenbrüchen.) E. Lexer.

82. **Operative Reduction of Fractures.**—At present Lexer is consultant surgeon at the Navy Hospital at Hamburg, and he here gives twenty-six illustrations of conditions in twenty cases of fracture in which he wired the stumps together, with or without a living bone support. He describes the technic to meet various conditions that may be encountered, and emphasizes the gratifying results in his cases.

Medizinische Klinik, Berlin

May 16, XI, No. 20, pp. 553-580

83 *Wounds of the Eyes in War. (Kriegsverletzungen des Auges.) A. Elschnig.
84 *Hygiene in the Field. P. Kuhn and B. Möllers. Commenced in No. 16.
85 *Localization of Bullets and Scraps of Shells with Roentgen Rays. (Ein halbes Jahr röntgenologische Projektillokalisation.) H. Wachtel.
86 Petrolatum in Bullets. (Ueber angebliche Giftwirkung eines Dumdumgeschosses.) O. Bujwid.
87 Small Metal Vial of Iodin for First-Aid Packet. (Wundantisepsis unmittelbar nach der Kriegsverletzung.) W. H. Dreuw.
88 Indications and Technic for Diathermy. F. Kraus.

83. **Wounds of the Eyes.**—Elschnig writes from Prague to comment on the remarkable variety of the injuries of the eyes among the soldiers, regretting that there is no time or opportunity to study and record all this ophthalmologic material. The first surprise was the discovery that in such a large proportion of cases the eyes had been defective to begin with. In 2 cases choked disk from a tumor in the brain was found in men who had been serving for weeks on the firing line. Only 36 cases of severe destructive injuries of the eyes reached his clinic, including 3 in which the bullet had passed through both temples, entailing total blindness. He has applied in 3 cases his method of substitution of the vitreous body in treatment of hemorrhage in the vitreous body, and the results were most gratifying. If this were done regularly and early, vision might often be saved or at least the shape of the eyeball retained in many cases otherwise doomed. He reiterates in conclusion that specialist examination and care are particularly necessary in the minor injuries of the eyes, especially from a passing projectile or minute foreign body in the eye. He encountered a host of injuries of this kind which were easily recognized, and vision was saved by proper treatment, but he also had many cases of the kind in which the time for proper treatment had long passed before they reached an ophthalmologist, and irreparable lesions and blindness were the consequence. The necessity for a consultant ophthalmologist at all the stationary hospitals near the front is apparent from these experiences. He even suggests that the management of the hospital might be held responsible for damages for blindness resulting from omission of the necessary minor ophthalmologic measures required.

84. **Hygiene at the Front.**—Kuhn and Möllers took notes of the clothing of the men in the bathing establishment, and a number of facts were thus learned by correlating the garments, etc., worn and the morbidity. The feet were found in the best condition when the footgear consisted of large high boots and one pair of quite thick woolen stockings. The footcloth had been discarded by 420 of 500 men thus examined, and only five of the others wore the footcloth without stockings.

The amount of bread actually consumed by the men per capita during a given period was found to be 640 gm. The daily ration of bread allowed is 750 gm. This instalment closes this long report of actual experiences at the western front during the nine months of the war, by the medical hygiene official and the physician in charge of the hospital service, both given unprecedented facilities, and authority for making the most of the opportunities at their disposal for hygiene of the troops and native populace in the regions occupied by the German army.

85. **Roentgenologic Localization of Projectiles.**—This communication issues from the central roentgenologic laboratory at Vienna, in charge of Holzknecht, where from 400 to 650 wounded men have been examined each month since the war began. In a third of the cases a foreign body was thus

revealed in the tissues. The part being examined is slowly revolved under the rays to determine the point on the skin nearest to the foreign body and the nearest point on the bone. A device for displacing the tube a trifle for a second exposure on the same plate, the *Schwebemarkenlokalisator*, was found extremely useful, saving much time and trouble.

Monatsschrift für Kinderheilkunde, Berlin

XIII, No. 8, pp. 359-392

89 *Importance of "Extractives" in the Diet. (Bedeutung von Extraktstoffen für die Ernährung.) H. Aron.
90 *Camphor Abscesses. H. Vogt.
91 *The Sagittal Sinus in Infants as Site for Intravenous Injection. (Zur Technik der diagnostischen Blutentnahme und der intravenösen Injektion beim Säugling.) L. Tobler.

89. **Importance of "Extractives" in the Diet.**—Aron's article issues from the university children's clinic at Breslau, and reports extensive research on young rats fed abundantly on casein, butter, wheat, starch and salts, with or without the supplement of an extract of wheat bran. The bran extract was given like a medicine, separately from the food, and under this the animals thrived and constantly increased in weight, while without it they failed to thrive and finally succumbed. The food was exactly alike in all the experiments. A number of curves are given showing how the animals' weight ran up in every instance in a few days after the bran extract had been given. He tried to keep the technic of his experiments like that of Osborne and Mendel, for purposes of comparison. The extractive was given separately from the food to exclude direct appetite-increasing action from it. With it the animals developed normally; without it they failed to increase normally in weight, grew thin and finally died. The same results were obtained with an extract of malt, only that its action was slower in becoming apparent. Some tests on six children were inconclusive, as the bran added to the food was repugnant to the children and made them vomit. Aron regards the results of his experimental research, however, as opening new perspectives and throwing light on many empiric observations.

90. **Camphor Abscesses.**—Vogt has encountered a number of cases of abscess formation at the point where camphorated oil had been injected under the skin of sick infants. The abscesses were sterile in some cases and in others staphylococci were found, possibly a metastatic infection, as the scrupulous care in the technic practically excluded contamination during the injection. The injection of other stimulants, caffein, etc., was very seldom followed by an abscess, suggesting that the oil was responsible for the damage. It is possible also that the debilitated organism may be incapable of transforming the camphor into harmless compounds, and it may thus have a toxic action. This seems to be particularly liable in cases of severe nutritional disturbance. One case is illustrated, showing the two large abscesses on the thigh. Even when absolutely sterile, the abscess is liable to open outward.

91. **The Sagittal Sinus in Infants as Site for Intravenous Injection.**—Tobler explains that the largest superficial vein in infants, the superior sagittal sinus, is the most accessible and most conveniently reached, while its anatomic position is always the same, and is readily located by the surrounding bones. It is further peculiarly adapted by its structure, which differs from that of other veins, in that the wall is so stout that it cannot collapse nor be easily perforated. Another advantage is that the curve of the skull presents the point for puncture in the most convenient position, and that the skull can be steadied for the purpose more readily than other parts. Tobler experimented on cadavers, injecting a stain into this sinus, and found that the injection always proceeded ideally, as also aspiration of blood from the sinus. Even when the needle did not puncture the lumen, or punctured too deep and injured the opposite wall, no injury therefrom could be detected. After practice on the cadaver, he applied the method in the clinic in fifty cases. If the infant screamed this increased the pressure in the sinus and facilitated the already simple technic. The blood thus obtained was always found sterile. Therapeutic injections of diphtheria antitoxin, normal serum or a preparation of gold proceeded without by-effects at the time or later. He always made the puncture at the rear corner of the greater fontanel if the sagittal suture was closed; if it was still open, he punctured about half way between the fontanels. Marfan utilized the sinus for saline infusion in 1898, and Blechmann commented on his technic as "simple and harmless."

Münchener medizinische Wochenschrift, Berlin

May 11, LXII, No. 19, pp. 641-672

92 Improved Technic for Deep Roentgentherapy. (Tiefenbestrahlung von Karzinomen mittels Röntgenmaschinen.) E. v. Seuffert.
93 Light Modifies Albumin, Rendering It Less Soluble. (Wirkungen des Lichtes auf die lebende Zelle.) F. Schanz.
94 Traumatic Aneurysms. A. Ploeger.
95 Advantage of Prompt Operative Treatment of Wounds of the Heart. (Herzwunden.) A. Schäfer.
96 *Treatment of Herpes Tonsurans. A. Salinger.
97 Wounds of the Spinal Cord. (Rückenmarksschüsse.) O. Rumpel.
98 Traumatic Myelitis. W. Mayer.
99 Abdominal Wounds. (Bauchschüsse.) H. Koetzle.
100 Fatal Gas Embolism During Injection of Oxygen; Three Cases. (Gasembolie bei Sauerstoffinjektion.) M. Simmonds. (Luftembolie nach subkutaner Sauerstoffapplikation bei Gasgangrän.) L. Frankenthal.
101 Prolonged Chemical Action from Contents of Shells. (Zur chemischen Einwirkung von Geschossfüllungen auf Wunden.) J. Volkmann.
102 Improvised Sanitary Arrangements in the Field. G. F. R. Kramer.
103 *Bloodless Lacing Up of Wounds. (Die Miedernaht.) A. Noder. (Anwendung eines Gummizugverbandes bei grossen Hautwunden.) R. Mühlhaus.
104 Improvised Extension Devices for Fractured Limbs. A. Ritschl and Others.

96. **Treatment of Herpes Tonsurans.**—Salinger has found tincture of iodin useful in treating herpes tonsurans; if more rapid action is necessary, he uses a salve containing 8 parts salicylic acid; 5 parts beta naphthol; 4 parts resorcin and 100 parts lanolin. With very deep herpes he soaks off the crust with a mixture of 3 parts salicylic acid and 7 parts creosote with olive oil to 100 parts. Then he wipes the surface with a 1:2,000 alcoholic solution of mercuric chlorid and then applies the naphthol salve, repeating daily. These measures proved successful in all but one case which continued a tenaciously progressive chronic course until an intercurrent erysipelas developed. As the latter subsided the herpes disappeared also. He suggests that inoculation with erysipelas might prove useful as a therapeutic measure for the last resort in similar cases.

103. **The Lacing Suture.**—Noder gives an illustration of a method of suturing which is proving extremely convenient under certain circumstances. He has a row of the metal hooks used in lacing a bodice sewed along the edge of a strip of cotton cloth. A strip of this kind is glued with a varnish along each side of the incision or wound. The lips can then be easily drawn together by lacing the sides together just as a bodice is laced up. Mühlhaus applies much the same idea, only he does the lacing with elastic cord, using safety pins instead of hooks. The pins are worked into strips of stout adhesive plaster edging the wound, with radiating reenforcing strips. An illustration is given of each method.

Therapeutische Monatshefte, Berlin

May, XXIX, No. 5, pp. 237-292

105 *Bronchial Affections. L. Hofbauer.
106 The Food of the Populace During the War from the Pediatrist and Internist Standpoints. (Die Volksernährung im Kriege in ihrer Bedeutung für die Diätetik des Kindes und Krankenernährung.) L. Langstein.
107 Electric Treatment of Lead Poisoning. (Zur Behandlung Bleikranker im galvanischen Zweizellenbad.) Schnitter.
108 Camphor for Dressing Wounds. (Kampferwein in der Wundbehandlung.) R. Koch.
109 *Asphyxia Neonatorum. (Behandlung des Scheintodes bei Neugeborenen.) R. Volland.
110 Pharmacologic Study of Extract of Capsella Bursa Pastoris. (Bursal.) A. Gröber.

105. **Bronchial Affections.**—Singer's method of treating chronic bronchial affections by restricting the intake of fluid is regarded by Hofbauer as having established its efficacy, especially when associated with calcium preparations. It is

contraindicated, he says, only with concomitant kidney trouble or suspicion of tuberculosis. All intake of water, soups, coffee and other fluids is restricted, gradually reducing to as little as 300 or 400 c.c. of fluids a day. After three days of restrictions he allows the patient to drink freely each fourth day. The patients bear this restriction of fluids with remarkably little discomfort. Thirst is relieved with slices of oranges or lemons. In most cases the patient increases 22 or 24 pounds or more in the course of this restriction of fluids over several weeks. The small amounts of fluid permitted may be given in the form of wine. Breathing through the mouth is an important factor in maintaining chronic bronchitis and this practice must be broken up. Tying up the jaw at night he regards as annoying and merely symptomatic. It is necessary to enforce a course of training in breathing with the mouth closed, and he advocates a little apparatus to train in nose-breathing; a light flares up whenever any air enters through the lips. Iodin preparations may be required to soften up the dried secretions in this mouth-breather type of bronchitis.

Epinephrin in bronchial asthma relaxes the spasm of the bronchial muscles, but has scarcely any action on normal bronchi. Meyer has commented on this as a striking instance of the variability in the action of a drug according to the state of the organ involved. Calcium reduces the irritability of the nervous system. Meyer has reported excellent results in thirteen of fifteen patients with bronchial asthma given every two hours a tablespoonful in milk of a mixture of 20 parts calcium chlorid; 40 parts simple syrup and distilled water to 200 parts, the prescription to be renewed only once.

Training the patient to breathe with emphasis on the expiration has usually a decided effect in reducing the irritability of the vagus innervation of the lungs, and thus is a causal treatment of asthma. Löwy and others have shown that the irritability of the lung vagus is directly proportional to the amount of air in the lungs. Reducing this irritability by lesser expansion of the lung, and keeping the air passages moist by breathing exclusively through the nose, are important and causal factors in the cure, especially when supplemented by what he calls *Summtherapie*, "humming therapy," which he has been applying for eight years. Its results have been permanent in the numerous cases in which he has applied it, regardless of complications. An apparatus to promote expiration is used with it at first, the "expirator." He does not describe the technic for his *Summtherapie*.

109. **Revival of the Asphyxiated Newly Born.**—Volland repeats here his description of a method for this purpose which he published in 1909. (Summarized in THE JOURNAL, Oct. 2, 1909, p. 1140.) Before cutting the cord he grasped the child as for the Schultze swinging, but left the child with its back leaning against the inside of the mother's thigh. He then lifted the child until its whole weight hung from his hands (the index finger in the axilla on each side, the other fingers on the back and the thumbs on the chest above the clavicles). Then the child was allowed to sink down again, while with the thumbs the chest was pressed back against the support of the mother's thigh to induce expiration. The child began to breathe naturally after a very few repetitions of this maneuver.

Wiener klinische Wochenschrift, Vienna

May 6, XXVIII, No. 18, pp. 463-490

111 Typhus. E. Wiener. Commenced in No. 17.
112 *Successful Operations for Tumors of the Spinal Cord. The "Compression Syndrome" in the Spinal Fluid. H. Schlesinger.
113 Operations on Tendons After Wounds of the Hands. (Sekundäre Sehnennaht und Sehnenplastik bei Schussverletzungen der Hand.) K. Wagner.
114 Vaccine Therapy of Ozena. S. Mazza.
115 *Importance of Bacteriologic Control in Epidemic Meningitis. (Genickstarre im Pustertal.) A. von Kutschera.
116 *War Aneurysms. (Kriegsaneurysmen, mit bes. Berücksichtigung der Gefässnaht.) H. v. Haberer. Commenced in No. 17.

May 13, No. 19, pp. 491-518

117 Efficacy of Neosalvarsan in Relapsing Fever. (Rückfallfieber.) K. Walko.
118 *Ergotism and Tetany. A. Fuchs.
119 Disease of the Cauda Equina. J. Gerstmann.
120 Determination of Oxyproteic Acid in the Urine as Sign of Cancer. (Diagnostische Verwertbarkeit der Oxyproteinsäurebestimmung bei Karzinom.) M. Damask.
121 Muscular Exercises in Aftertreatment of the Wounded. (Muskelmechanische Bemerkungen.) R. Fick. (Physikalisch-mechanische Nachbehandlung.) F. Wachter.
122 Denists' Formaldehyd—Cresol Mixture for Dressing Gangrenous Wounds. A. Leonhardt.

112. **The "Compression Syndrome" of the Cerebrospinal Fluid.**—Schlesinger refers by this term to the changes in color and in albumin and cell content of the cerebrospinal fluid when there is a tumor compressing the spinal cord. In a recent case a previously healthy man of 32 developed, in 1912, intense pain in the back, increased by movements. After several weeks of the pain, it subsided under wet cups. Several months later, paresthesia and weakness in the legs came on. After a few months he was free from symptoms for three months. Then a syndrome developed with spastic paralysis and other signs of a spinal tumor; the spinal fluid was a clear lemon yellow, with considerable albumin but few cells. An unusually large extradural tumor was easily removed and practically complete restitution followed. In another case a healthy man of 35 had severe pains, suggesting neuritis in the thighs, radiating down to the feet and worse at night. For a year or so the trouble had been ascribed to neuritis, but finally sphincter disturbances and flaccid paralysis testified to a spinal tumor. In this and in several other cases, the aggravation of the pains on reclining in the ventral decubitus was a notable symptom. The tumor or inflammatory process with this was generally on the ventral side of the spine and sacrum. The spinal fluid in this second case showed xanthochroma, much albumin and spontaneous coagulation but few cells. An angiosarcoma was found in the cauda equina, and it proved impossible to remove it entirely. The condition was somewhat improved by the incomplete operation, but some of the symptoms persisted.

115. **Epidemic Meningitis.**—Von Kutschera relates the details of a number of cases occurring in series among the troops in the Tyrol which emphasize the importance of bacteriologic control of epidemics and especially of epidemic meningitis. The part played by healthy carriers was especially significant in this epidemic. Intraspinal injection of antimeningococcus serum displayed marked efficiency. It was repeated as often as necessary.

116. **War Aneurysms.**—In the thirteen cases of gunshot aneurysms treated by von Haberer by suturing the injured vessels, recovery was prompt and complete in all, and there have been no complications since. This was the case likewise in twenty-five of twenty-nine cases in which the vessel was ligated, but in two others amputation was required later, and two others died from hemorrhage from an erosion. The circulation proceeds in all the cured cases with nothing to suggest that the men are not quite normal. Von Haberer's experience has demonstrated that while it makes the operation a little more difficult if the blood is not shut off, yet the information to be thus obtained far outbalances this.

118. **Ergotism and Tetany.**—Fuchs relates that a young soldier developed severe tetany and his hospital card was inscribed "tetany and frost-bite." He entered Fuchs' service the fifteenth day after the tetany had developed, and it was learned that the discoloration of the toes had not been noticed until several days after the tetany had been well under way. Examination of the stools confirmed Fuchs' assumption that the whole syndrome, tetany and all, was the result of poisoning from ergot. Large amounts of ergot were found in the stools and in the bread the man had been eating, before the tetany had developed. With Wasicki's fluorescence microscope method, ergot in flour is readily detected. Fuchs two years ago pointed out the resemblance between the clinical picture of ergot poisoning and of endemic tetany in Austria. He noticed in sifting the literature that those describing ergot poisoning never seemed to have encountered a case of endemic tetany, and those describing the latter had never seen a case of ergotism, and consequently no one before had thought of comparing them. Endemic tetany prevails in the spring as a rule, many dozens of cases being usually

found then in the Vienna hospitals, but this year he has known of only one case. He ascribes this to the fact that the cereals were taken charge of by the government after the war began, and the large mills doing the grinding are less liable to permit admixture of ergot than is the case under ordinary circumstances.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXVII, No. 1, pp. 1-278. Last indexed April 3, p. 1201

123 Prolapse of Uterus and Rectum in Newly Born Child with Spina Bifida. F. Ebeler and F. Duncker.
124 *Action of Salvarsan Taken by the Mother on Congenital Syphilis of the Fetus. E. Meyer.
125 *Influence of Transplantation of Ovaries. (Beitrag zur Entstehung der Osteomalacie.) Author's name omitted.
126 Intensive Mesothorium Treatment of Gynecologic Carcinomas. S. Aschheim and S. Meidner.
127 *Functioning of the Kidneys During Pregnancy. (Nierensuffizienz und -insuffizienz in der Schwangerschaft.) E. Holzbach.
128 Action of Roentgen Rays on the Ovaries. (Interstitielle Drüse und Röntgenkastration.) P. Hüssy and J. Wallart.
129 Experimental Research on Action of Synthetic Hydrastis Preparations on the Uterus. H. Wendling.
130 Angioma in the Placenta. H. Ribbert.

124. **Salvarsan in Pregnancy.**—This article includes reports of both clinical and experimental experience, with a cursory review of work done by others in this line. The findings in forty-three cases during the pregnancy and afterward in both mothers and children are tabulated under various headings. It does not seem possible for arsenic to traverse the sound placenta, and the undoubted benefit from salvarsan treatment of the pregnant woman must be indirect, the result of the improvement of the mother under the salvarsan. It probably also renders the placenta less permeable for the syphilitic toxins. The drug was borne well by the women; there never was hemorrhage or abortion after intravenous injection of the salvarsan, and none of the fetuses died on account of the medication. Of the thirty-seven women given an adequate course of the salvarsan treatment, 86 per cent. of their children were living ten days after birth; 15.8 per cent. of the children had a positive Wassermann at birth.

125. **Ovary Implants.**—This communication issues anonymously from the gynecologic clinic at Halle in charge of Veit. The work was done on sixty-two rabbits, and the details in nineteen are here related, with one colored plate. The connection between the ovaries and osteomalacia is emphasized by the results observed, confirming that osteomalacia is an affection for which some functional disturbance in the organs of internal secretion is manifestly responsible. When there is excessive functioning of the ovaries, the elimination of calcium is accelerated, while its assimilation seems to be interfered with more or less. This throws light on the action of epinephrin in treatment of osteomalacia, as it has an antagonistic action to that of the ovaries.

127. **Clinical Importance of the Condition of Kidney Functioning During Pregnancy.**—In Holzbach's long article he points out a number of points by the aid of which we can estimate how the kidneys are behaving, and recognize when they lag too far behind normal functioning. He sounds the alarm that insufficiency on the part of the kidneys is of more fateful import for the fetus than has been appreciated hitherto. The fetus, being more sensitive, suffers earlier and more intensely from the retained toxic elements of the urine than the maternal organism. With the aid of the functional tests now at our command, we can tell exactly what the kidney is capable of at a given moment, and this at a time when symptoms from deficient kidney functioning have not yet become apparent. He regards this as of far-reaching importance in obstetrics. Instead of placidly waiting to learn by the outcome whether the kidney symptoms observed are the result of organic disease or of merely "pregnancy kidney," we can now differentiate them at once. We know that a pregnancy almost invariably has an aggravating influence on nephritic kidneys.

In the fifty-seven cases of pregnancy kidney here described, sixteen of the fetuses died, that is, more than 28 per cent. In Baisch's 226 cases, 21 per cent. of the children were born dead and 19 per cent. were premature births. In 55 per cent. obstetric interference was required, which further endangers the child. These figures show how Nature strives to interrupt the pregnancy with pregnancy kidney—a condition that obstetricians have never regarded as a call to hasten the evacuation of the uterus. With our functional tests we are now able to recognize insufficiency of the kidneys, and when it reaches a certain degree he declares that we must regard this as an urgent call to interrupt the pregnancy. The most important sign of absolutely incompetent kidneys is the lowering of the freezing point of the blood, as this shows retention of the elements of the urine. The freezing point and specific gravity of the urine and the elimination of sodium chlorid are further important criteria. When these tests give unfavorable findings, the pregnancy should be interrupted in the interests of both mother and child. He reiterates that the fetus is more sensitive than the maternal organism, and feels the effect of the retained toxic substances sooner, and it is better for it to be prematurely delivered than left to suffer from the retained elements of the urine which act like poisons on it.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 16, XXXVI, No. 39, pp. 609-624

131 *Echinococcus Cysts in the Kidneys. (Cisti da echinococco del rene, ripetutamente svuotatasi per le vie naturali, coincidente con aborti.) L. Carta-Mulas.

May 20, No. 40, pp. 625-640

132 Treatment of Tetanus in the Present War. A. Bertolini.

131. **Echinococcus Cysts in the Kidneys.**—The spontaneous rupture of the cyst in the kidney in the case described led to such severe kidney colic and muscular contractions that the muscular throes involved the uterus and caused the expulsion of a fetus. This occurred on three separate occasions in the course of two years, the renal colic and expulsion of daughter cysts in the urine being followed each time by an abortion, while the tumor previously palpated in the right kidney region could no longer be felt. The pain during the emission of the daughter cysts was atrocious, and blood in the urine showed injury of the walls of the urinary passages. If the cyst forms again and ruptures, he will advise a course of intensive neosalvarsan treatment; the patient refuses to permit an operation. As to the frequency of ecchinococcus disease of the kidney, it was found in 2 among 63 cases of echinococcus disease during the last ten years in the Cagliari province in Italy where Mulas practices; Davaine has reported 31 in 367 cases of echinococcus disease; Neisser 80 in 983, and Madelung 7 in 196. Manasse compiled from the literature 51 cases with spontaneous rupture of the cyst in the kidney pelvis, and a spontaneous cure followed in the majority.

Riforma Medica, Naples

May 15, XXXI, No. 20, pp. 533-560

133 *Microchemical Color Reaction in the Blood Corpuscles. (Alcuni caratteri morfologici, strutturali e funzionali degli elementi figurati del sangue rilevati mediante una "reazione cromogena.") C. Rubino.
134 Syphilitic Changes in the Heart. F. Soprana and C. Piazza. Concluded in No. 22.

May 22, No. 21, pp. 561-588

135 *Retention Stomach Tube for Continuous Study of Stomach Functioning. (Sulla esplorazione continuata del chimismo gastrico mediante il sondaggio a permanenza.) L. R. Lanza.

133. **Chemical Color Reaction in the Blood Corpuscles.**—Rubino has been applying in microscopic examination of the blood some of the reagents used in tests for occult blood, etc. He found benzidin superior to guaiac for the purpose. The figured elements of the blood, treated with it, assume different colors, none like that of the benzidin solution itself, and hence he thinks we can regard them as true chemical color reactions. He analyzes the responses in the different types of cells and shows how they correspond to the known laws of biology, and may serve in differential diagnosis. He applies the reagent to blood freshly drawn and allowed to evaporate in the air. The reagent is the ordinary 10 per cent. filtered alcoholic solution of benzidin to which is added, just before using, 1 drop of hydrogen dioxid for each 25 drops of the benzidin solution. The reagent thus prepared is

poured on the stratum of blood and left in contact for three minutes. Then the reagent is washed off in alcohol and then in running water and the specimen is mounted in neutral balsam.

135. **Retention Stomach Tube in Study of Gastric Chemistry.**—Lanza expatiates on the important information that can be obtained by examining the stomach contents every ten or fifteen minutes after a test meal, leaving the stomach tube in place for several hours. A very fine tube is used for the purpose and it is not introduced until after the meal, so it does not in itself stimulate the stomach to extra secretion or peristalsis. Comparative tests with other technics confirmed the indifference of the stomach to this method and demonstrated its reliability. Fifteen charts are given to show the curves representing gastric functioning in persons with normal stomachs or with various affections involving the stomach more or less directly. The findings are obviously far more instructive than when the stomach content is examined only once after an arbitrary interval. In chlorosis he detected by this technic tardy hyperacidity which would have escaped ordinary methods of examination. He never left the tube in place for more than two hours at a time.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

May 22, I, No. 21, pp. 1767-1846

136 *The Changes in the Blood Picture with Disturbance in the Internal Secretions (De afwijkingen in het bloedbeeld der ziekten met inwendige afscheiding.) M. W. Scheltema.

137 *Creatin as Index of Pregnancy Intoxication. (Kreatine als aanwijzer van zwangerschapsvergiftiging.) C. J. C. Van Hoogenhuijze.

138 *Absence of Knee-Jerk as Sign of Hysteria or Degeneracy. (Het verschijnsel van Westphal als stigma degenerationis en bij hysterie.) G. C. Bolten.

136. **The Blood Picture with Various Affections of the Ductless Glands.**—Scheltema tabulates the findings in regard to the blood count and other details of 100 patients, including 5 with exophthalmic goiter; 4 with hyperthyroidism; 3 with myxedema; 3 with simple goiter; 3 with chronic rheumatism; 4 with enuresis or spastic constipation; 10 with the thymic-lymphatic status; 2 with adiposogenital dystrophy; 6 with diabetes; 10 with obesity; 8 with various nervous affections; 11 with asthenia, including 2 with vagotony, and 4 specimens of infantilism. Comparison of all this material shows that derangement of any of the glands with an internal secretion, and also the status thymicolymphaticus seem to be accompanied by a relative and also often an absolute lymphocytosis, but more generally a mononucleosis. Less frequently there is leukopeny and eosinophilia. When this blood picture accompanies symptoms suggesting disturbance in any special ductless gland, he regards it as an indication for treatment with the extract of the gland in question.

137. **Creatin as Index of Pregnancy Intoxication.**—Van Hoogenhuijze reports experiences which apparently indicate that in a normal pregnancy the proportion of creatin in the urine is always below 20 per cent. of the total creatinin. A figure above 20 per cent. shows that toxic influences are at work, and it may thus warn of impending eclampsia or other serious upset. The findings in fifteen cases are compared, including two cases of eclampsia. The proportion of creatin ranged from 19.1 to 44.6 in one case, averaging 28.1 per cent.; in the other the range was from 29.1 to 38.6 per cent. This latter patient had had four normal pregnancies, then one with puerperal eclampsia, and then the present pregnancy in which eclampsia developed even before delivery. In another case eclampsia seemed to be impending, but was warded off; the range of creatin in this case was 36.9 and 28.3; in a fourth case it averaged 25 per cent.; In all these cases the urine had been examined for creatin before delivery. In six other cases there were unmistakable signs of pregnancy intoxication, and the creatin ranged from 20.7 to 44.5 per cent. The range in one woman with hydramnion and albumin, leukocytes and tube casts in the urine was from 40.7 to 45.4 per cent. The highest percentage, 49.9, was in a case of hydatidiform mole. In two other cases, with slight albuminuria, the range was from 10 to 19 per cent., and the course of the cases was entirely normal. Some of the women had been examined before the pregnancy and no creatin had been found. During the first month of the pregnancy the proportion was 5.8 per cent., and by the third month it was 18.9 and the eighth month 15.1 per cent. These findings suggest that the discovery of creatin might reenforce the diagnosis of pregnancy in dubious cases, after exclusion of other sources for the creatin in the urine.

138. **Loss of Reflexes Without Organic Disease.**—Bolten reports the case of an apparently healthy young man who has not a trace of the knee jerk or Achilles tendon reflex on either side. The discovery of this areflexia, as he calls it, was made while the man was taking the physical examination for the police force. The plantar reflex could be elicited but sluggishly, and the abdominal and cremaster reflexes not at all. Absolutely nothing otherwise could be found in the robust young man to suggest organic disease, and Bolten has been unable to find an analogous case in the literature.

Brazil-Medico, Rio de Janeiro

April 15, XXIX, No. 15, pp. 113-120

139 Brazilian Protozoon. (Tropidomonas rotans n. g. e n. sp.) A. M. Da Cunha.

April 22, No. 16, pp. 121-128

140 Chilomastix Bittencourti Found in Cecum of Rats. (Sobre os flagellados dos mammiferos do Brazil.) O. O. R. da Fonseca.

Semana Medica, Buenos Aires

April 15, XXII, No. 15, pp. 473-508

141 Lead Lined Cabinet to Avoid Injury in Roentgen Work. (Profilaxis medica de los rayos X.) C. Heuser.

142 *Excessive Gastric Functioning. (Hiperestenias gastricas primitivas.) T. Martini. Concluded in No. 16.

143 Prevailing Systems of Infant Feeding. (Alimentacion del niño.) P. Rueda.

April 22, No. 16, pp. 509-540

144 Analysis of Milk. (Analisis de la leche.) P. J. Pando.

April 29, No. 17, pp. 541-556

145 The Innervation of the Stomach. (Enfermedades funcionales del estomago. IV.) T. Martini.

146 *Pyonephrosis; Two Cases. D. Talens.

142. **Gastric Hyperfunctioning.**—Martini's study of primary functional disturbances of the stomach is for the benefit of the general practitioner; it describes the methods in vogue for obtaining and analyzing the stomach content and interpreting the findings. He also gives some diagrams to fill out in the individual case to facilitate classification, and hence determine the indications for treatment. He gives seven distinguishing characteristics for each of the principal groups of functional stomach disturbances: the acute paroxysmal with sensory or with motor or with secretory symptoms predominating; the intermittent acute, and the chronic.

146. **Pyonephrosis.**—Talens' two cases were notable mainly on account of the difficulty in the differential diagnosis, nothing in either case having ever called attention to the urinary apparatus, and there being no pathologic antecedents liable to entail such. The two patients were married women in the thirties, and the disturbances commenced with a sudden onset, intense pain in the right kidney region spreading down into the leg, with fever and headache. The pains seemed to be localized most in the abdomen in one case, and there were chills and fever and vomiting, but no disturbances at micturition. There was a lull in the symptoms in one case for two days, and then they returned severer than before. An appendicitic abscess was assumed and an incision released 3 or 4 liters of pus; the fistula continued to secrete pus for three months, with recurring attacks of intense pain, but no fever nor vomiting. The attacks kept returning every month or week until by the end of a year the primary focus in the kidney was recognized. The kidney was found bathed in pus, and a complete cure followed nephrectomy. In the other case the pains and a tumor in the kidney region led to nephrectomy the fourth month, with complete recovery. In neither case had there been any disturbance at micturition and the urine was limpid. The outlet of the diseased kidney had evidently been obstructed in each case.